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Motivation of Remittances and the Potential for Diaspora Philanthropy: Empirical Studies of Rural Bangladesh, and the US-Bangladeshi Diaspora

Saika Shaolin Belal
College of William and Mary

Motivation of Remittances and the Potential for Diaspora Philanthropy: Empirical Studies of Rural Bangladesh, and the US-Bangladeshi Diaspora

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by

Saika Shaolin Belal

Accepted for Honors

_____
Professor Eric Jensen

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Professor Arnab Basu

_____
Professor Rani Mullen

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Motivation of Remittances and Diaspora Philanthropy

Empirical Studies of Remittances in Rural Bangladesh, and the Potential for Philanthropy Among the US-Bangladeshi Diaspora

Saika Belal

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Department of Economics
College of William & Mary

Faculty Advisor: Professor Eric Jensen

Section 1: Overview of the literature on migration and remittances

"We are only beginning to learn how to make migration work more consistently for development. Each of us holds a piece of the migration puzzle, but none has the whole picture. It is time to start putting it together."

- Kofi Annan, Previous UN Secretary General at High Level Dialogue on International Migration and Development.

"*We reasonably think that an important piece of this puzzle is migrants' remittances"*

- Salomone, 2006

Introduction

Remittances have been broadly termed by the International Organization of Migration (IOM) as "monetary transfers that a migrant makes to the country of origin" (Barua, 2006). These are usually private transfers of money from migrants back to their family living in the country of origin. However, remittances can also be funds that are invested, deposited or donated by the migrant to the home country. As migration becomes more and more widespread in a steadily globalizing world and as money transfer channels become more efficient, more migrants are sending back money to their home countries causing a remarkable rise in remittance flows. In addition to the sheer size of remittance flows, it is also notable that the bulk of these financial flows are received by developing countries.

In 2008, remittance flowing into developing countries amounted to $338 billion according to a recent development brief by the World Bank (Ratha, Mohapatra and Silwal, 2009). The top remittance receiving countries in 2008 were India, China, Mexico, Philippines and Poland (See Appendix for a graphical presentation of World Bank data). For some developing countries, remittances exceed any other forms of foreign financial flows such as foreign aid as well as foreign direct investments (FDI). Remittances also amount to a significant portion of developing country GDPs. For example, remittances make up an astonishing 46%, 39% and 34% of the GDPs of Tajikistan, Tonga and Moldova respectively (World Bank, 2008).

This outstanding extent of financial flows moving from developed countries to developing countries indicates significant potential for impacting economic progress in the developing world. At the micro-level, remittances are personal transactions between a migrant and his relatives. Therefore, they typically cater directly to the most pertinent needs of the receiving household. Also, because migrants usually choose to move to more thriving and stable economies, their earnings, and thus their remitted transactions, represent a stable source of income for struggling households who are often vexed by fluctuations in their income. The capacity of family members to share information on economic constraints and needs makes remittances more effective at targeting the specific economic constraints facing households in the developing world. Whereas foreign aid, which is often, plagued by management and governance problems, is usually granted with restrictions on how it can be utilized. Considering the severity of the poverty that exists in developing countries and the economic volatility facing low-income populations in these regions, the possibility of a stable means to diversify income,

accumulate savings, access credit, and manage risks through the income of a migrant family member, has considerable implications. In addition to the household level impact of remittances, the macro implications of remittances are also impressive. Remittances represent the largest source of foreign exchange earnings and help developing nations to repay debts as well as acquire credit for external borrowing. A recent "Migration and Development Brief" by the World Bank states about the impact of remittances on developing countries during times of economic crisis:

"At over $300 billion a year, remittance flows provide an enormous source of development financing. In the near-term, the resilience of these flows has made them even more important as a source of external financing, offering a ray of home in these difficult times. "(Ratha et. al, 2009)

While the potential for remittances to boost development in developing regions seems promising, the actual impacts of remittances are not so clear. Empirical research on the impact of remittances on some regions such as in Bangladesh and Uganda demonstrates a reduction in poverty headcount and greater investment in education and healthcare due to a loosening of budget constraints which previously barred these investments. Research also indicates that remittances generate new jobs in the local economy through multiplier effects (World Bank GEP, 2006; see also Hossain, 2007). A large multinational survey project that investigates the impact of remittances in 74 countries also supports that remittances have a significantly positive impact on poverty in the developing world (Adams and Page, 2005). On the other hand, some research also shows that remittances can induce dependency, create moral hazard problems (as receiving household members reduce their participation in the labor force), decrease

attempts to save, and also encourage riskier investments (Chami, Fullenkamp and Jahjah, 2003).

The different findings on the impact of remittances on different communities suggest that the factors that affect and determine remittances among different pools of migrants and households must be studied in order to gain a comprehensive understanding of the impact of remittances on development. This paper will look at the case of remittances in a region of rural Bangladesh and use empirical data on the demographics of receiving households, family ties between migrants and households, and forms of utilization, to determine the motivation of remittances and the role of household ties in impacting remittances.

First, in **Section 1.1**, we will take a brief look at some features of remittances that characterize them as a unique set of money transfers that are different from other foreign financial flows such as foreign aid and foreign direct investment (FDI) funds. Next, in **Section 1.2,** we will look at some of the literature on different models of migration. We will focus briefly on two main theories of migration, because migration is a precondition to remittances, and research on migration shows that the issues that influence migration are frequently crucial in determining the patterns of sending and receiving remittances. In **Section 2** we will look at the empirical data from rural Bangladesh. Finally, in **Section 3,** we will consider a new area in remittance research - diaspora philanthropy.

1.1 Trends in Remittances

Stability

Stability of financial flows denotes low volatility or less shifts in the economy due to either favorable or unfavorable shocks (Salomone, 2006; see also Ratha, 2004). Remittances to migrant-sending nations are considered stable because they are less volatile than other forms of financial flows, like ODA (Official Development Assistance) and FDI (Foreign Direct Investment), which are more prone to sharp withdrawals or increases based on the economic climate. Salomone(2006) points out that while FDIs and capital market flows had fallen in 2005 and 2006 due to recession in high income countries, remittances continued to increase during this time. Similarly from 1998 to 2001, when revenues from private capital flows suffered due to the Asian financial crisis, remittances to developing countries continued to rise. Salomone states that even when remittances do respond to acute economic situations in the recipient countries, "the decline of remittances and volatility have been much smaller than those of other capital flows, meaning they affected by the investment climate in recipient countries in the same manner as capital flows, though to a much lesser degree" (Salomone, 2006).

Research conducted by the World Bank that examined remittance against factors such as corruption, inequality, domestic debt, openness, financial development and country risk found that while remittance receipts averaged 0.5% of GDP of countries with higher than median level of corruption, it averaged to 1.9% of GDP of countries with lower than median level of corruption. This study also found that countries that had greater openness in trade and greater financial development also received larger remittances.

Two characteristics of remittances which explain their stability in contrast with other sources of financial flow such as ODA and FDI, are that they are private

transactions characterized by solidarity motives with the home country. These factors remain stable even in times of economic crisis. An altruistic remitter will continue to send money to the household in times of crisis, and will most likely increase the amount of the transactions. However, even if the migrant remittances are a form of investment, remittances still do not decrease as sharply as other portfolio investments in response to downturns in the home economy, because of the migrant's strong intentions to invest in the home country despite the unprofitability of such investments in times of economic difficulty. Whereas foreigners, who are largely responsible for generating foreign direct investments, are less likely to make investments during hard times.

Remittances have been seen to serve as macroeconomic stabilizers, but they can also take the form of investments in the receiving country, and the cyclicality of remittances in reference to the home country GDP is one indication that distinguishes between these different motivations for remittances. However, it should be noted that while investment remittances may decline in response to economic downturns, investment from migrants rarely fall as sharply as other foreign investments, and are thus still characterized by stability.

Cyclicality

To discern how remittances take effect, it is important to consider whether the motives behind remittances are altruistic ,formed out of solidarity with the household or home country, or portfolio investment interests. Whether remittances are countercyclical, procyclical or acyclical with the GDP of receiving countries are also important indicators. Cyclicality is the relationship between the net capital flows into a country and its output.

Remittances are said to be countercyclical if are negatively correlated with the business cycle of a country, i.e. if remittances into a country increase in bad times and remittances out of a country increase in good times. However, this countercyclicality should not be misinterpreted as instability. , Though they may increase or decrease in amount, remittances rarely ever drop sharply as remittances. Instead, countercyclicality itself indicates that remittances can be counted on during bad economic times.

On the other hand, if remittances into a country when the economy of the country is going well is an indication of procyclicality. If there is no statistically significant correlation between a country's business cycle and remittance then it is said to be acyclical.

Remittances are important to many developing countries because they are sent by migrants to compensate low points of economic performance in their home countries. In this case, remittances have a more altruistic motivation behind them and usually behave countercyclically. For developing countries in which recipient families live close to subsistence levels and depend heavily on remittance income, migrants may increase remittances in times of hardship. This makes remittances vital to the resilience of some developing countries as they serve as macroeconomic stabilizers that help to minimize large fluctuations in the national income.

Conversely, if remittances are sent as self-interested investments in the receiving country then they will display procyclicality. Migrants are more likely to send remittances to their country when the economic climate there is conducive to investments (Salmone, 2006).

When looking at cyclicality of remittances it is important to consider the economic situation of the host country. If the GDP of the host country correlates with the cycle of the GDP of the home country, then it is more difficult for migrants to send a part of their income as remittances during hard times (Salomone, 2006),

The cyclicality and motives of remittances are important issues today because they are key factors in the discussion of whether it is possible for countries to cite potential future remittances as collateral as a way to overcome liquidity constraints for international loans in times of economic crisis.

Sustainability

Sustainability of remittances can be defined as the relationship between the duration of migrants' stay in destination countries and the level of remittances sent back home (Salomone,2006). Most of the literature on the sustainability of remittances has stated that there is a negative correlation between the duration of a migrants' stay in host countries and the amount of remittances sent back to the home countries. This is evidenced by the decrease and in some cases the end of remittances sent back home with time. It is widely argued that this feature of negative correlation becomes apparent after five years of permanent stay abroad, whereas during the initial five years remittances are usually on the rise. The International Organization of Migration (IOM) states that the turning point in the relationship between the intention to remit and the time spent abroad occurs when the legal status of the migrant changes or when migrants receive an open-ended labor contract(see Salomone, 2006). This correlation also exists whether the remittances are sent for altruistic motives or portfolio investment motives. In both cases,

there is still an average decrease in remittances after five years of permanence abroad. For those migrants remitting with altruistic motives based on solidarity with the home country, this decreased sustainability can be due to ties with the home country weakens over time. Migrants that remit for investment purposes do so because they expect to gain from their investments once they return to the home countries. However, if they no longer expect to return then their interest in investing diminishes over time.

Accordingly, research on migration patterns and remittances have also shown that temporary migrants, are more likely to remit than migrants who intend to settle in the destination region, and that the decline in remittances is less prevalent among temporary migrants (Pinger, 2007). However, temporary migrants are also frequently characterized by lower education and skill background and receive low-wage jobs in host countries, whereas long-term migrants tend to be highly educated and become employed in the more lucrative skilled sector (Siddiqui, 2004).

The sustainability of remittances is an important issue, especially with respect to highly skilled migrants who have the potential to remit significant amounts back to their home countries. This is also related to the issue of the brain drain that impacts the home countries. Skilled migrants tend to live abroad for a longer time. They also have a higher tendency to a "reunification effect" which is "the intention of the migrant of living with his family in the host country."[5] When this "reunification effect" is stronger than the "wage effect", which is the potential increase in the amount remitted due to the higher skills embedded by the migrant", then the negative correlation between the time spent abroad and intention to remit takes place (Salomone, 2006). It should also be considered

that highly skilled migrants are also likely to come from wealthier families therefore they may not face as much of a need to remit.

The characteristics of remittances, discussed in this section, indicate that these financial flows, often characterized by stability and acyclicality, could have a significant impact in relieving economic pressures on receiving families. However, as the discussion on sustainability implies, the continuation of remittances is partially determined by the presence of the motivation to remit, which has a tendency to decline over time. Thus, understanding why migrants make the decision to remit is an important consideration for any study of the potential usefulness of remittances. This paper aims to present a brief theoretical discussion of the motivation of migrant remittances, followed by an analysis of empirical data on remittance-receiving households from a rural region of Bangladesh.

Before we embark on a theoretical discussion of the motivation for remitting, we will first turn to literature on two prominent theories of labor migration, the neoclassical model and new economics of migration. This is because, in order to understand the origin and determinants of remittances, it is important to understand the origins of migration which always precedes remittances. Moreover, many studies have shown that the factors determining remittances are often predicated by the factors that contribute to the decision to migrate. (Though there are also studies that have shown that these two factors are not related (see Funkhouser, 1995), and we will address this in section 1.3)

1.2 Understanding migration

1.2.1 Neoclassical Theory of Migration

The Neoclassical model explains migration based on labor market considerations. This model has both micro and macro components, and several scholars have contributed to the development and extension of each of these components. The macro theory, developed by Harris and Todaro(1969) and Todaro(1976) relies on a simple labor supply and demand model such that countries with a small endowment of labor relative to capital will have high wages, whereas countries with a large labor endowment relative to capital will have low wages. An assumption of the Harris-Todaro model (1969) is that expected wages in urban areas is the driving force behind rural-urban migration. It posits that the differences in wages between regions adjusted for unemployment rates in the destination area are the main factors causing migration. Due to the difference in expected wages, between regions with a high capital to labor ratio and low labor wages and regions with low capital to labor ratio and high labor wages, there will be a labor supply from the capital-poor regions to the capital-rich regions. Conversely, there will also be a flow of capital, including human capital (skilled workers), from capital-rich regions to capital-poor regions due to the relatively higher capital productivity in capital-poor regions. These opposite flows of capital will decrease wages in their destination regions and increase wages in their source regions. More clearly, due to labor out-migration from capital-poor to capital-rich regions, the reduced labor the capital-poor regions will place upward pressures on labor wages, while increased labor supply in capital-rich regions will place downward pressures on labor-wages. Thus, the neoclassical model predicts that migration of both labor (and capital) will lead to an equilibrium in labor wages (and capital wages) in the entire labor market, and any remaining wage differential will be a measure of the costs of migration (Massey et. al, 1993).

The micro component of the neoclassical theory of migration holds that international migration is composed of a sum of individual decisions to migrate based on labor market differentials (Sjaastad, 1962). Sjaastad presents migration as an investment in individual resources. Individuals choose to migrate when an analysis of costs and benefits of migration indicates a positive return on migration. Thus, migration considerations are made up of individual monetary and non-monetary costs and returns of migration. Some examples of monetary costs are increased costs of food, living and transportation in the destination region, as well as foregone earning in the home region. Sjaastad (1962) also explains that migrants consider non-material costs of migrating, such as the "psychic" costs of leaving their home region costs of cutting old ties and making new ones, adjusting to a new culture and language, as well as the effort of learning new sets of skills for a new job market, etc. These costs are investments in human capital on the part of the individual. Thus individuals choose to migrate to those areas where they expect to receive the highest returns from migration to offset these costs (Sjaastad, 1962; see also Massey et. al, 1993). Similarly, non-monetary returns involve migrant preferences for the destination region, such as utility gained from the climate, culture, etc., while monetary returns are a function of increased earnings, or increased capacity as a consumer, which can involve reduced prices, reduced costs of employment, etc. (Sjaastad,1962). The most prominent expected benefit of migration is higher wages, which is a compound of considerations on the level of wages in another country compared to the origin country, and the likelihood of being hired in the country. The individual nature of the considerations presented by Sjaastad explains why certain people from a region migrate while others do not. This is because, the decision to migrate

depends on such individual variables as level of education, sex, age, work experience, etc., which can all contribute to a person's expectation of being employed in another region. The tendency of an individual to migrate increases if the individual has human capital characteristics that will either increase the probability of employment, or increase the level of wages the migrant will receive in the host country. Thus, it predicts that individuals with higher levels of education, experience, and job training are more likely to expect higher earnings abroad, and thus are more likely to migrate. Similarly, variables that lower the costs of migration, for example the presence of family members in the country of destination, will increase the tendency of a person to migrate. On the other hand, Sjaastad(1962) finds that age is associated negatively with the likelihood of migrating, because individual expectation of returns on investments decreases with age. Even non-material aspects, such as one's expectation of wage differential between two regions to eventually converge, which can differ significantly among different individuals, can lead to a reduced likelihood of migrating.

As an extension of the neoclassical model, we can assume that migration only occurs due to different labor market conditions and that if wage levels equalize across two countries then there will be no need for migration. Similarly, this model implies that the size of migration flows is determined by the size of the differential in wages and labor market conditions between different regions. Thus, in order to control immigration, governments should try to change expected earnings in either the source or host regions – for example, to decrease emigration a country should try increase expected earnings for its labor population (Massey et. al, 1993).

There are very few long-term empirical studies that investigate whether the neoclassical theory applies to international migration. Sjaastad(1962) states that in order for his model of migration to apply, "there must be no barriers to the free movement of labor and other inputs among industries or across space". Thus empirical research that tests the neoclassical assumptions of the interaction between migration and the labor market and wage differentials have been somewhat limited to intra-national rural-urban migration or migration between nations of close proximity and strong ties which would reduce legal barriers to migration.

Fleisher (1963) and Maldonado (1976) find a strong relationship between unemployment levels in Puerto Rico and increasing migration to the United States. Maldonado (1976) was also able to show a positive correlation between increasing wage differential between the two nations and migration to the United States. Her research also found evidence of upward force on labor wages in Puerto Rico due to out-migration, which is consistent with neoclassical predictions. Castillo-Freeman and Freeman (1992) found that following the institution of a minimum wage law in 1974, there were shifts in selectivity of migration such that migration to the United States increased more selectively for low-wage workers, whereas more skilled and educated Puerto-Ricans living in the United States tended to migrate back to Puerto Rico. This is because the required minimum wages required most companies to increase their wages, thus many companies opted to exclude much of their labor from the production process, causing increased out-migration among low-skilled workers.

Jenkins (1977) also provided evidence for the neoclassical assumptions on wage differentials and migration in his research on Mexico-USA migration. His study found that the prominent disparity in wage levels between agricultural labor wages in Mexico compared to agricultural wages in the United States had a strong relationship with rates of migration to USA. His study also found that an increase in factors that contributed to higher expected wages in Mexico, such as investment in agriculture, commodity prices, wages, and agricultural productivity, resulted in a decrease in emigration to USA (Jenkins, 1977; see also Massey, et. al, 1994).

However, for this study, we will be looking at migration determinants on a micro level. A study that involves some of the micro variables we will be looking at is described in Taylor's article, "Undocumented Mexico-U.S. Migration and the Returns to Households in Rural Mexico" (1987). It focuses on expected income gain of rural Mexican households from the migration of a family member to urban areas. Although, this study fits the model of new economics of migration (another model of migration discussed below), the findings also serve as empirical evidence for the assumptions of the neoclassical model.

Taylor used individual and household level characteristics to determine household members' physical and human capital, such as sex, age and education, as well as "migration capital", such as whether the individual has contacts in the destination region, in order to determine which family members will face lower costs of migration, and greater likelihood of being employed in urban industries. Using these variables, he developed an indicator of the difference in expected contribution to family income of individuals who have migrated and individuals who have remained in the home region.

Taylor expected that a large earning differential between a person's expected income as migrant compared to his income as a non-migrant would be the main factor determining whether that family member migrates. In order to determine the expected migrant and non-migrant earnings of each person, Taylor used data on contributions by migrants and non-migrants in the past against a set of their physical and human capital characteristics to predict what each person's contribution would be in the previous year as USA migrants and Mexican residents. The difference between these two sets of expected earnings is the expected earning differential due to migration. Thus, the findings also helped to determine the loss to Mexican households due to the migration of a family member.

The results of the study revealed that migration was a means of allocation of labor for households looking to maximize their resources. Taylor(1987) stated that most migration from rural Mexican regions were temporary and largely funded by other family members. Therefore, most migrants remitted back a large portion of their incomes to the household. Another significant finding was that the most productive rural inhabitants, or those family members that are expected to contribute most to the household as workers in the source rural region, are selected to not migrate. Hence, migration has a positive impact on Mexican villages as the most productive members are not lost to migration, and at the same time families benefit from remittances from family members who do migrate. Although, this resource allocation strategy describes the family contract model of the new economics of migration model, the assumptions for which Taylor helped develop in his other studies in Stark and Taylor (1989), the findings of this study also support that an expectation of increased earnings from migration, based on physical and

human capital considerations, partially motivates the decision to migrate, which is central to neoclassical understanding of migration.

Howeverit is important to note that if migration is indeed predicted by individual profit maximization motive then remittances are not likely to arise (Massey et. al, 1994). Generally, in the neoclassical model, migrants impact the home economy only by causing labor supply shifts which impact the labor market conditions, such as for example, worker wage increases in response to a reduction in labor supply from outmigration. Another model of migration, the new economics of migration, suggests, instead, that migrants continue to be an active part of the home economy through remittances they send to their households. We look at this model next.

1.2.2 New economics of Migration

This model came into prominence in Oded Stark and David E. Bloom's 1985 paper titled "The New Economics of Labor Migration". Under this model, a wider social entity is collectively responsible for individual migration (Stark and Bloom, 1985) and both parties are mutually interdependent. The theory states that the decision to migrate is made by units of related people, usually the migrant and the non-migrating family, rather than only the individual migrant. In this theory of migration, the family unit decides to allocate its labor resources not only to maximize family income, but also to minimize risks to the economic security of the family. Later extensions of this model (see Stark, 1991) have also shown that the family arrangement to send a member abroad allows the

family to avoid the pressures of missing or imperfect markets in the sending country, such as insurance and capital markets.

Often this model is described in terms of a family contract model such that both parties, migrant and non-migrant members of a household, make a contractual arrangement to share the costs and returns from migration. Transportation costs and pre-employment living expenses are examples of migrant costs that the family shares, while remittances are an important example of returns from migration. The mutual agreement is a function of joint utility maximization in which the migrant and the non-migrating family determine a means to maximize their utility over two areas, the home and host country (Hoddinott , 1994; Taylor, 1987). The migrant receives financial support from the family with the initial investments in migration, such as transportation costs, and living expenses during the initial period of unemployment. The family also provides some form of unemployment insurance (Stark and Bloom, 1985). On the other hand, once the migrant has a job, under the mutual contract model, s/he will send back remittances which provide the family with crucial financial assistance.

Neoclassical theory assumes that all other markets are functional and immigration is a response to unequal labor market conditions (such as wage differentials) between two regions. New economics of migration, on the other hand, states that migration is a means for households to not only increase income but also, to relieve the impact of failures of local markets, such as the insurance and credit markets. This model is particularly relevant in rural agricultural settings where household incomes are dependent on unpredictable environmental events. In this setting remittances offer key

financial insurance against loss of income due to crop damage, or unproductive seeds, etc, and guarantee some level of economic stability for the family (Stark and Bloom, 1985). This is a very significant role of remittances because insurance markets are usually not well-developed in developing countries, and even when they are, the rural farming families frequently cannot afford access to them (Massey et. al, 1993). Thus without insurance against loss or damage of crops, the family's livelihood can be threatened by an unforeseen loss in their produce. Therefore, the family has a strong incentive to diversify their sources of income with the income of a migrant family member, in order to avoid complete vulnerability to income loss (Stark and Levhari, 1982). The income earned by a family member in another region can help secure family well-being and insure against a severe loss of livelihood in times of local economic fluctuations. This insurance aspect of remittances is most effective when the host country's economy is either negatively or weakly correlated the source country's economy., in addition to wage differentials, the new economics of migration predicts that families also take this into consideration in choosing the destination locations (Stark and Bloom, 1985; Massey et. al, 1993).

Besides providing insurance, remittances can also provide families access to credit for investments in productive activities. Investments such as purchasing new farming equipment or better strain of seeds are crucial ways for rural families to boost their production, and their income. However, low-income families in developing nations face heavy capital constraints because they seldom have access to reliable credit markets to borrow money for these costly investments. In an economy with missing or imperfect credit and capital markets, remittances sent from a family member can act as a source of capital for funds necessary for the family to invest in increased productivity. This

contradicts neoclassical theory, which assumes that if migrants send home a part of their income to their households, then this income will increase the household's income unitarily. Further, according to the neoclassical model, this additional income will only boost consumption, and should not contribute to any further income-generating activities (Massey et. al, 1994).

Empirical evidence in a survey project conducted by Fletcher and Taylor (1992) in the Michoacan state of Mexico, shows however that, households use received remittances to boost production, increasing purchases of inputs like hired labor, farm machinery, and land. Another study, done by Taylor and Wyatt (1993) also offers empirical evidence that reception of remittances increases the likelihood of household consumption of goods and services that help generate income, such as education, equipment, and more livestock. Furthermore, a study done by Taylor (1992) shows that remittances have long-term asset-accumulation effects on Mexican farm households. This suggests that remittances, contrary to the neoclassical model, have a non-unitary effect, because they increase household income by more than the remitted amount through investments in income-generating goods and assets, rather than just general consumption. The role of remittances as capital occurs especially in regions where households face heavy capital and credit constraints preventing growth in household production, and where families must consider a significant risk of loss of produce and income (Stark and Levhari, 1982). Thus new economics of migration holds that remittances received by households cans serve as both insurance against loss, and credit for reducing capital constraints and engaging in more production.

In keeping with the mutual benefits of the family contract model, while the migrant remits to offer the family financial support, the family also offers services to the migrant (Stark and Bloom 1985). Lucas and Stark (1985) posit an investment arrangement between the migrant and the household, in which remittances function as a repayment of the household's investment in the migrant's education. Analysis of remitted sums and education-level of migrants by Johnson and Whitelaw(1974) in their study on Kenyan rural-urban remittance transfers show a strong correlation between an increase in the amount remitted and the increase in migrant education. They referred to these findings as proof of an investment structure, within which the family supports the migrant's growth in human capital, and in return receives repayment with interest on their investment in the form of remittances.

Lucas and Stark refine this logic by controlling for the possibility that the increased remitted amounts are not just a function of higher wages, which are also strongly correlated to level of education. This tendency of the migrant to increase the amount of remittances in response to increased wages, is consistent with the altruism model of explaining remittances (discussed later in section 1.3). Instead, Lucas and Stark claim that, if remittances are a part of an investment arrangement, there will likely be a differential in how the remitted amount changes in response to an equivalent increase in education among different family members. The increase in remittance amounts can be shown to correlate more positively with the increase in education of those members of the household in whose education the household is more likely to have invested in (such as the children of the head of the household), than with the increase in education of other

members (such as sons and daughters-in-law, spouses, uncles, etc.) in whose education the household is less likely to be heavily invested.

Lucas and Stark found this hypothesis to be supported by their data in Botswana. They found that by including a dummy "own young" which is equivalent one for children, grandchildren and nieces and nephews of the head of the household, they were able to discern a significantly greater increase in remittances due to increase in education levels of this group of family members, than when this variable is not included. This is indicative of a repayment structure for investment in education. Besides education, an investment model simply suggests that the more a household invests in the costs of migration, the greater the amount of remittances transferred by the migrant (Lucas and Stark, 1985).

In an agricultural setting, the migrant family member may benefit from the family looking after any land or livestock the migrant may own in his absence (in addition to the other forms of support and unemployment insurance mentioned above.) Also, often an incentive for migrant children to continue remitting, under the contractual model, is the promise of inheritance. In this case, the household'sownership of some threshold level of inheritable land is positively related to the likelihood of migrating, as these landed families are more likely to support migration of a family member. In a study of rural Western Kenya, Hoddinott (1994) finds evidence that the mutual contract model applies, and that the level of remittances is contingent on the ability of the parents to reward the "good behaviour" of the migrant through promises of inheritance (see also Lucas and Stark, 1985).

Unlike the neoclassical model, migration under the family arrangement model does not simply serve the purpose of maximizing income. In fact, it is consistent with this model for families to send family members even when there is no significant wage differential between the host and home region (Massey et. al, 1993; Bauer and Zimmermann, 1995). The main purpose for migration and remittances in this model is to secure the economic well-being of the family by providing insurance against fluctuations in locally earned income, as well as providing an alternate source of funds for productive investments. Thus under the family contract model, the source of the income matters, however income maximization is not necessary. Also, unlike the neoclassical model, the new economics of migration does not simply involve laborers leaving local economies to enter foreign high-wage economies. Rather families try to diversify their income by engaging in both the local as well as the foreign economy (Stark and Bloom, 1985). It follows then that a rise in wage levels or improvement in the local economy might in fact increase emigration as it makes families more capable of supporting migration of a family member. Besides making changes to the wage level, governments can influence immigration by changing the availability of insurance and credit markets.

1.3 Motivations of Remittances

We now address the question of why migrants remit. Though our discussion on migration would suggest that the reason for remitting is closely tied to the reason for migration itself, however, there is still reason to study the motivation for remittances on its own. This is because though they are closely connected and interdependent, migration and remittances are distinct phenomena, as not all migrants remit. Similarly, not all

remitters who have migrated from similar economic regions remit in the same way. A study which closely informs this reasoning is Edward Funkhouser's study on comparing remittance patterns in the capital cities of El Salvador and Nicaragua (1995). He found that while both cities have similar number of migrants and similar economic conditions, twice as many households in San Salvador received remittances. Moreover, of the households that received remittances, the average amount of remittances received per capita in San Salvador was twice as much as per capita remittances received in Managua. Funkhouser (1995) conducted a comparative analysis of micro-level household and migrant characteristics to determine if the difference in remittance patterns originated due to differences in the pool of migrants. However, the analysis revealed that the migrants were similar in terms of age, gender, education and even the time of migration. Despite these similarities, a comparison of remittance sending patterns between the pool of migrants reveal sharp disparities in remittance sending behavior. Thus the results suggest that while migrants may share similar factors that lead to migration, the factors that determine whether they will remit can be different and unrelated. Thus, we will look at some prominent theories of motivation for remitting.

1.3.1 Altruism vs. Self-interest

One of the earliest and most prominent explanations for the question of why migrants choose to remit was altruism, though different models of altruism exist (Rapoport and Docquier, 2005). Here we will look at the model of altruism which claims that the utility of the migrant is a function of both his utility as well as his family's utility. If altruism holds then the level of migrant's remittances should positively correlate to migrant income, and negatively correlate to the income of the recipient household. Salomone

(2006) points out some other features of remittances motivated by altruism: There should be inverse relationship between the sustainability of the remittances and presence of immediate family members in the host country. Also, remittance levels should be countercyclical to the home economy, such that it rises when the home economy is suffering. Altruistic remittances are also positively related to family ties with the receiving household as a strong emotional attachment with family members could increase the feelings of care and concern over their well-being (Dalen, Groenewold, & Fokkema, 2005).

One of the complications in discerning whether remittances are motivated by altruism is that the predictions of an altruistic model often match the predictions made by another explanation of remittance-sending motivation, self-interest. Both models predict that remittances would increase in response to a negative income shock to the receiving family. However, the reasons for this increase in remittances according to the two models are quite distinct.

The theory of self-interest is another extreme of an explanation that, like altruism, also ties migrant remittance behavior to household level considerations. Unlike altruism, however, the self-interest explanation offered by Lucas and Stark (1985) suggest that remittances could be tied to the desire to inherit wealth and assets from the receiving household, to purchase the service of the household in maintaining his assets owned in the home country, or as a means to establish increase one's reputation in the home community in preparation for return. In all of the above instances, the remittances serve as an investment on behalf of the migrant and indicate that the migrant expects to return to the home country. In this situation, remittance transactions will be sustained as long as

the migrant is abroad but once he departs those investments should drop to zero (Salomone, 2006). Hodinott (2004) conducted an empirical study in among rural households in western Kenya in which the remitting behavior of migrants displayed an investment in the wealth of the household, which they eventually hope to inherit. In this instance, remittances are a function of the household's ability to rewards the remittance-sending of migrants (i.e. houses well –endowed with land, livestock, businesses and other inheritable wealth) (Hodinott, 2004; see also Agarwal and Horowitz, 2002).

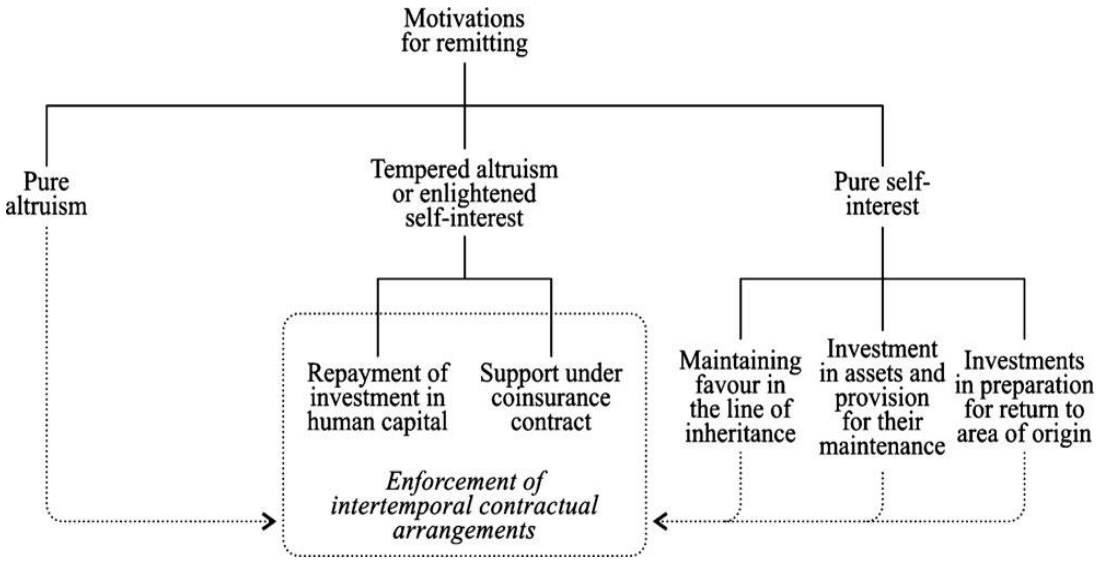
1.3.2 Mutually Beneficent Contract Model

While both altruistic and self-interested remittance-sending can have overlapping results in which receiving families receive greater remittances in times of economic downturn, Lucas and Stark(1985) propose a variable that can be tested to clarify the distinction between the two contrasting migrant behaviors. They premise their argument on the observation that under the self-interest model, receiving households are able to attract remittances from self-interested agents by exhibiting remittances some form of "bargaining power" . Thus it holds that self-interested remittance-levels will increase as bargaining power of families increase, which in turn is dependent on the family's wealth. Therefore, self-interested remittances will be positive correlated to increase in recipient household wealth. This is exactly contrary to altruistic behavior, which predicts that remittances should increase for households with lower wealth-levels (Lucas and Stark, 2005; see also Dalen, Groenewold, & Fokkema, 2005).

It can be intuitively understood that altruism and self-interest represent two extreme possibilities and can only serve as partial explanations for different remittance

patterns. Lucas and Stark (1985) eventually propose that a more far-reaching explanation of remittance motivations is an integration of the altruistic and self-interested concepts which they termed as "tempered altruism" or "enlightened self-interest."

Figure 1: Remittance motivations in the new economics of labour migration



Based on Lucas and Stark (1985) extracted from: Carling (2008)

In this analysis, remittances are seen as a part of a mutually beneficial contract between the migrant and the receiving family. This concept is a part of the "new economics of labor migration" model described above. In a mutual arrangement, remittances serve two major functions - repayment on the costs of migration, and education costs borne by the family, and insurance against risks for the household in the country of origin**.** The first function describes remittances as a return on the family's investment in the human capital of the migrant. The risk-mitigation component is a more frequently cited function of remittances in a mutual contract model. In this case the family supports the migrant in the initial stages of job search, thus providing a form of unemployment insurance, however,

more importantly, once the migrant has a job, he can provide the family financial and capital support in adverse economic situations, thus allowing for greater consumption – smoothing. The insurance function of remittances enables receiving families to engage in riskier investments which are expected to have higher-yields (Agarwal and Horowitz, 2002). The risk-management aspect of remittances can be successfully executed if the host economy is negatively or weakly correlated to the source economy, so that the migrant income is not affected by fluctuations in the home economy.(Stark and Bloom, 1985; see also Carling, 2008)

Lucas and Stark(1985) further posit that the mutual contract is self-enforcing. This self-enforcing nature of remittances combines both self-interest and altruism. A migrant can continue remitting because he intends to inherit, or that he wants to ensure that his assets in the source country are being looked after, or because he is concerned with his prestige in his community in the source country, or a combination of some or all of these motivations. At the same time however, self-enforcement can also be explained by the migrant's utility from the well-being of the family and explains the mutually beneficial arrangement of the contract. Altruism, and its emphasis on strong attachment to the family, also explains why these mutually beneficial contracts of remittances exist within families rather than between migrants and non-related bodies of people as a business contract.

We now move onto an empirical study of rural households in the rural region of Mirzapur, Bangladesh.

Section 2: Empirical Study on the Motivation for Remittances: Bangladesh

2.1 Introduction

The previous section outlines two of the most prominent theories on labor migration, the neoclassical theory, and the new economics of labor migration. We also looked at some possible theories on what motivates remittances, altruism and self-interest, and finally a partial integration of both , proposed by Lucas and Stark in 1985, the mutually beneficial contract model.

For this project, we are concerned with understanding what motivates remittances to rural Bangladesh, using a 2009 data set from Mirzapur, Bangladesh. The most commonly cited ideas on motivation are, as previously discussed, altruism and self-interest. Altruism holds that the migrants' utility is dependent on the utility of the origin household, and thus the increased utility of the household provides incentive for remittance. Typically, this theory characterizes strong ties between the migrant and the household. Self-interest as a motivation for remittance implies that the migrant remits to

secure investments within the home country for an expected return, such as inheritance or maintenance of his possessions by the household in his absence.

However, from their empirical study on remittances in Botswana, Lucas and Stark proposed a new theory of motivation for remittances, which they termed as "enlightened self-interest" (or "tempered altruism"). This model consists of a contract between the household and the migrant that serves the personal interests of both parties, and is therefore mutually beneficial. Remittances occur in context of repayment on the household's investment in the migrant's human capital and migration costs, as well as a component of a coinsurance agreement between the household and the migrant. In the coinsurance agreement the migrant receives support from the household during periods of job search or joblessness, while the migrant remits to the household to insure it against unexpected decreases in income, and risky investments to increase production. Thus the migrant enjoys income from overseas job (usually higher wages) and family services such as maintenance of his property and business back home, while the household enjoys the insurance offered by income-diversification. In this way the migrant and the household to maximize their joint utility over the home and destination (often termed as "host") regions. Remittances are driven by self interest under a family contract because the model predicts that migrants remit to secure services of the family, to secure his reputation in society upon his eventual return, and to increase his chances of inheriting from the household. At the same time, the existence of remittances between relatives in a household rather than any unrelated group of people entering into a mutually beneficial contract suggests the presence of altruism. Thus, both components of self-interest and altruism contribute to the longevity of the agreement by making it self-enforcing.

Lucas and Stark (1985) consider pure self-interest or pure altruism as extremes of the mutually beneficial contract model. However, empirically discerning altruism from self-interest or even the family contract model (enlightened self-interest) is difficult as remittances under both motivations have similar outcomes. A commonly cited similarity in remittance literature is the increase in remittances in response to adverse income shocks under both altruism and self-interest, and even the family coinsurance contract. However, Lucas and Stark (1985) posits that under self-interest of the family contract model, the increase in remittances will be even greater for households with more land, livestock and other forms of wealth, whereas altruism predicts the inverse situation, where the less wealthier households receive more remittances (see also Dalen, Groenewold and Fokkema 2003). Another distinction that Dalen, Groenewold and Fokkema (2003) use to examine the motivation of remittances flowing into Egypt, Morocco and Turkey, is the relationship between years abroad and the level of remittances. They hold that under altruism remittances should gradually decline as family ties weaken as the migrant spends a longer time away from home, while under self-interest and the family contract model, remittance levels should be remain stable during the period of the contract and then decline sharply when the contract expires. Other research studies have shown a few other empirical differences which make the motivation for remittances more distinctive, and we will point these out in our discussion of our choice of variables later in this paper. (see also Appendix A for a table of predictions extracted from Docquier and Rapoport (2005))

In this study we utilize data on household and migrant characteristics to understand migration and remittance decisions within Bangladeshi households.

Remittances are an important part of the Bangladeshi economy, forming nearly 11% of GDP, and are the nation's largest source of foreign exchange earnings. According to World Bank records, remittances to Bangladesh have experienced a boom since 2001. Annual remittance flows increased from 1.9 billion USD at the end of 2001 to 9.7 billionUSD at the end of 2009, at an annual average growth rate of around 27% in the last eight years.

Evidence from research on the impact of remittances on households in rural Bangladesh, suggests that remittance inflows have been a strong force for poverty reduction and even economic growth through encouraging more productive household investments (Ratha(GEP), 2006; see also Hossain, 2007). On a macro level, they have helped Bangladesh maintain current account surplus despite trade deficits. Remittances also exceed net earnings form exports and official development assistance, and are therefore the primary source of foreign exchange reserves (Siddiqui, 2006).

The large flow of remittances to Bangladesh is a result of large scale labor exportation from Bangladesh into the low-skilled job sectors of mainly the Middle East and Southeast Asia. Research shows that most of the remittances to Bangladesh comes from labor migrants rather than from the diaspora (Hussain, 2009; see also Siddiqui, 2004a). The presence of extensive remittances implies that Bangladeshi migrants maintain a strong link, whether emotional, contractual, or both, with their origin households.

In this study, we are concerned with what inspires these transfers of resources, and generally predict, according to the findings of Lucas and Stark (1985) that there

exists a mixture of motives with pure self-interest, and pure altruism as extremes. The objective of this study is to develop a suitable model that will allow us to test predictions associated with the mutually beneficial contract model of remittances as well as altruism and self-interest using data from households in Mirzapur, Bangladesh.

Setting

Bangladesh is a developing country in South Asian with a population of 160,000,128 in 2008 (World Bank country profile), the seventh-highest population in the world, and a population density of 2917.6 people per square mile. It has a poverty headcount ratio of 40% dereasing from almost 50% in 2003, and a literacy rate of 55%. The life expectancy age at birth is 66 years old. (World Bank Country Profile). The gross domestic product (GDP) in 2009 was 79,554 million USD, and the real GDP growth rate is estimated to be 5.7% in 2009 (CIA World Factbook, 2010 and World Bank Country Profile). The GDP per capita income is $497, compared to the world average of $10,200. The service sector contributed more than half of the national GDP, followed by industry and then agriculture, although nearly two-thirds of the populations is employed in agriculture, and only around one-quarter of the population is employed in the service sector.

Bangladesh's total exports and services amounted to 13.97 billion USD, and make up 20.3% of the GDP. These exports flow mainly to USA, Germany, UK, France and Netherlands. The main exports are mainly ready-made garments, even though the agricultural sector employs more of the population than the service industry. Besides garments, Bangladesh also exports frozen fish, jute, leather and tea. Gross revenue from

garments exports, 12.3 billion USD in 2009, ranks as the highest foreign exchange earnings for Bangladesh, however, when we account for costs of raw materials, then the earnings from remittances, 9.7 billion USD in 2009. contribute even more to foreign exchange earnings than net earnings from garment (Siddiqui, 2006). Bangladesh imported an estimated value of 20.22 billion USD in 2009, mainly in machinery and equipment, chemicals, iron and steel, textiles, foodstuffs, petroleum products and cement. (Information taken from CIA World Factbook, 2010)

Bangladesh has a migration rate of -2.53 persons per 1000 people, with an estimated total of 4 million Bangladeshis living and working abroad. Most Bangladeshi emigrants from Bangladesh move to the Middle East and Southeast Asia in search of low-skilled jobs. There is another distinctive flow of Bangladeshis to the United States, however this flow is smaller and composed of long-term and usually highl-skilled professionals.

Much of the population of Bangladesh lives in rural areas. Rural Bangladesh is largely characterized by agriculture. Literacy rates, especially among females, are much lower in rural areas. Bangladesh has seven main divisions, and 64 districts. Our study was conducted in the Mirzapur subdistrict of Tangail district. The Tangail district lies in the central region of Bangladesh and is a part of the Dhaka division, which also incorporates the capital city, Dhaka. Tangail has a population of about 3.2 million, with a population density of 2461.1 people per square mile which is slightly less than Bangladesh. The average literacy rate in Tangail is much lower than the rest of Bangladesh, at a meager 29.6% with male literacy rates being 36.1% and female literacyrate being 22.4%. Agriculture is Tangail's main industry, and employs around

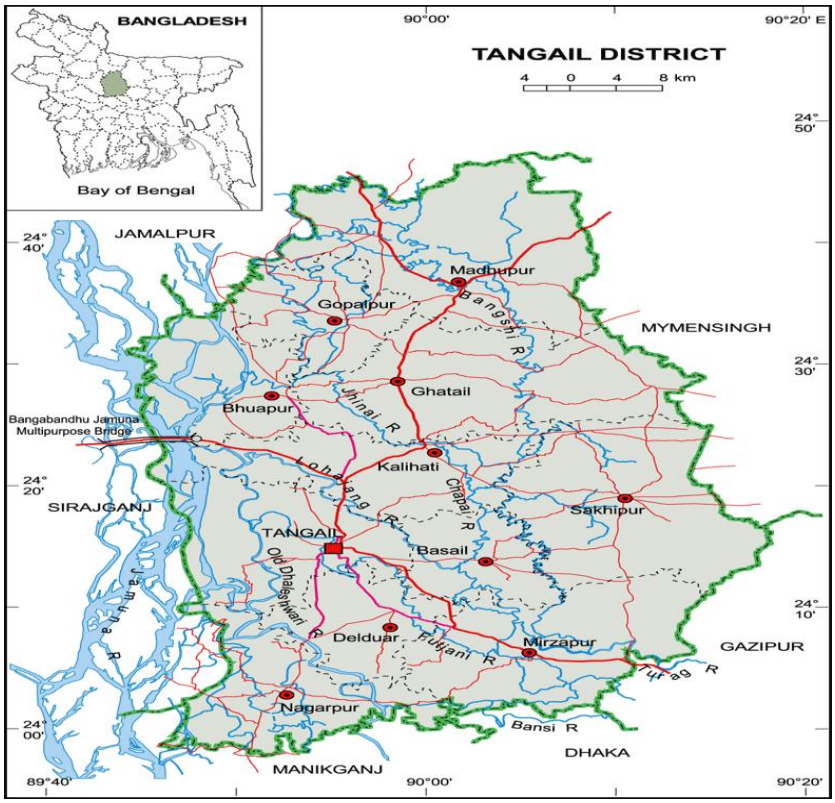
49.53% of the population, followed by agricultural labor, commerce, service, wage labor, transport, and industry. It has a surface area of 3,414.39 km², and and 3, 386.53km2 of it is cultivable land. Almost 50% of the cultivable land is used to grow two crops at a time, while 31% of the land is used for three crops at a time, and 19% is used to grow single crop. Also, 60% of the land in Tangail is irrigated. The main crops grown are rice, jute, sugarcane, wheat, mustard seed and pulse. (Information taken from Banglapedia)

Besides land crops, Tangail also produces fruits such as mangos, jackfruit, bananas, lychees, and pineapples. Tangail also has a renowned textiles and weaving industry, as it is the home of the " Tangail sareee" a material woven from both cotton and silk in beautiful patterns. Tangail sarees are one of the most famous forms of saree in Bangladesh.

Tangail's mainl exports are jute, pineapple, banana, sugarcane and saree. (Information taken from Banglapedia)

Tangail is divided into 12 subdistricts, one of which is Mirzapur, the area of our study. There is very little data at the subdistrict level however we will refer to ICDDR,B's baseline data for Mirzapur. Mirzapur is also a rural area, like the rest of Tangail, with most of its population employed in agriculture, or dependent on subsistent agriculture. It has a total area of 373.89km2. ICDDR,B reports a sample area of 224km2 with a population of 253, 759 and a population density of 1133/km2 (2905 people per square mile) which is higher than the average population density of Mirzapur, and very similar to the average population density in Bangladesh. The migration situation in Mirzapur is similar to the rest of Bangladesh, with almost 40% of households reporting at least one migrant family member. Migrants from Mirzapur also most frequently move to

the Middle East, and Southeast Asia (ICDDR,B baseline database: See Appendix G). Given this large population of migrants, and a fairly high tendency of labor out-migration, Mirzapur offers a good setting to study remittances.



Tangail, Bangladesh (taken from Prime Minister's Office Library, Bangladesh government.)

Mirzapur, Tangail (taken from Prime Minister's Office Library, Bangladesh government.)

2.2 Data

The data for this study are from a 2009 field study conducted in 5 villages of Mirzapur sub-district of Bangladesh. The surveys were carried out in 500 households in five small villages of Mirzapur, Tangail. Tangail In the context of rural dwellings, we defined households as people who eat daily meals together, and usually share resources for meals.

The survey contains detailed information on household demographics, livelihood and possessions, as well as some information about relatives living abroad, their ties, and money sending behaviors. In this survey we addressed the following questions:

(1) What household level factors affect the likelihood of households receiving remittances.

(2) What migrant characteristics affect the likelihood of households receiving remittances.

The survey was conducted over the period of two months in 2009. As such, the survey is not a time-series or longitudinal study, nor does it compare data across two locations, as a cross-section study would. Our dataset uses one-time data collected from 500 randomly selected households.

In the next section, we will provide a summary of a few key features of the households and migrants in our sample. We will also briefly look at how households choose to utilize remittances.

Descriptive Statistics				
Variable		**# observations**	**Min**	**Max**
Household				
Size of Household (mean)	**4.48**	**500**	**1**	**16**
Age of Household Head (years, mean)	**45.564**	**500**	**17**	**125**
Female head of household (%)	**18**			
Number of Females in Household (mean)	**1.858**	**500**	**0**	**9**
Age of household members:				
Level of Education of Head of Household(%)				
No formal education	**43.1**	**215**		
Primary education or lower	**44.1**	**220**		
Completed up to secondary education	**6.4**	**32**		
Higher than secondary education	**6.01**	**30**		
Household wealth and dwelling:				
Household Income (Taka, mean)	**6370.759**	**411**	**41**	**40001**
Per Capita Income (Taka, mean)	**1464.825**	**411**	**20.5**	**10000**
Common types of Occupation for household heads (%):				
Small business/store owner	**35.8**			
Daily laborer	**17.8**			
Produce Sale	**14.7**			
Number of Rooms in House (mean)	**2.498**	**500**	**1**	**9**
Estimated floor area (decimile, mean)	**10.73096**	**499**	**0.5**	**65**
Durables:				
Number of Fans per household (mean)	**1.980822**	**365**	**1**	**9**
Number of Tvs per household (mean)	**1.057269**	**227**	**1**	**3**
Number of Fridges per household (mean)	**1**	**39**	**1**	**1**
Number of durables in a household (mean)	**0.424**	**500**	**0**	**11**
Size of Land owned (decimile, mean)	**100.2333**	**255**	**1.5**	**896**
Number of animals/livestock owned	**3.954**	**500**	**0**	**27**
Families with international migrants (%)	**65**	**325**		
Migrants:				
Number of International Migrants in a household (mean)	**0.932**	**500**	**0**	**5**
Age of Interntational Migrants (years, mean)	**31.41957**	**460**	**14**	**65**
Years Abroad (years, mean)	**5.177106**	**460**	**1**	**30**
Number of emigrants that are related to the household head as (%):				
son	**31.6**			
Brother	**19.1**			
household young	**39.5**			

Spouse	**10.7**			
Son in law	**6.2**			
Number of emigrants in regions:				
Middle east	**56.2**	**360**		
Southeast Asia	**13.3**	**85**		
All other regions: Europe, North America, South America, Central America, Australia, etc.	**3.1**	**20**		
Cost of emigration of all emigrants (Taka, mean)	**322183.8**	**321**	**40000**	**2110000**
Percent of households with migrants that contributed in migration expenses	**56.7**	**182**		
Education of Emigrants (%):				
No formal education	**10.3**			
Primary education or less	**43.4**			
Secondary education or higher	**18**			
Occupation of Emigrants (%) :				
Labor	**90.4**	**416**		
Service	**9.7**	**45**		

2.2.1 Descriptive Statistics

A. <u>Household Demographics</u>

Household characteristics and the household head:

Of the 500 households surveyed, the mean household size was 4.5people per household, with a maximum of 16 people in a household. A majority of the households (82%) had male head of households indicating the presence of a strong patriarchal structure. However the total number of females and males in a household are roughly equal with an average proportion estimate of 1.09.

The average age of household heads was 45.6 years, with male head of households being slightly older than the average with a mean age of 46.8 years, and the

female heads being much younger with a mean age of 40.7years. Only 13.8% of household heads are above the age of 65, while 15.8% of household heads are 30 years or younger. Most household heads (52.6%) are between the age of 25 and 45 years of age. A small portion of the sample households were Hindu, however almost 90% of households interviewed are Muslim.

The level of education in rural areas of Bangladesh is generally very low, and this is reflected in our sample. Very few household heads are educated beyond primary schooling. A large proportion of household heads have had no formal schooling (43.1%), and 44% of household heads are just literate. Only 12.4% of household heads have completed secondary schooling or continued on with studies beyond secondary schooling. This trend of few educated household heads is almost identical across male and female heads, however, proportionally, fewer female heads are illiterate in this sample (36.7%).

Similarly, the average ratio of literate members to illiterate members in the entire household, accounting for young members who have not yet been schooled, is slightly lower than one (.98) so households mostly have as many, if not more members without formal education than those with any form of formal education.

B. <u>Household wealth</u>

Occupation types:

Most household heads are also income earners, and are predominantly, in order of frequency, small business owners (or store owners), daily laborers, farmers, and company

workers (i.e. working in floor management positions in factories). In general, people employed as small business owners (i.e. owners of small stalls in the nearest marker), large business owners (i.e. owner of actual shops, pharmacies, contractor companies etc.), medical Workers, company workers, farmers, and fishermen earned higher than the average incomes. Whereas, daily laborers, farm laborers, garments workers, storekeepers (or salesmen), rickshaw pullers, and pension recipients generally received lower than the mean level of monthly income.

Number of Income earners:

The mean number of income earners is 1.06, thus most households (63.8%) have just one income earner. The highest number of income earners in a household is 4, and 17.6% have no income earners at all. Most of the households with no income earners (67%) are female-headed. Also, interestingly , all of the households with no income earners have at least one domestic or international migrant, with almost 90% of them having international migrants. Similarly, all but one of the households with no income earners reported receiving some form of remittances from migrant family members.

Household income:

Excluding the households reporting zero income earners and thus zero monthly income, the mean monthly income for households in our sample was 6371TK (excluding remittances.) The average monthly per capita income in our sample was 1465TK, or $21

per month. This is significantly lower than the per capita income estimates for all of Bangladesh ($125 per month).

Possessions: Land, Pond and Livestock

Ownership of land is quite varied in our sample. A little over half of the household (51.1%) own some form of land (other than land of current dwelling), and half without any land ownership (49.1%). Land is primarily used for subsistence agriculture (almost 75% of all land owned), weakly followed by land used to grow crops for sale (11.8%) and then land purchased to build family dwelling and land used to rent to other families for use (both below 7%). Some of the better-off families (32.5% of those who own land) also employ other families to work on their land.

Less than a quarter of the households own ponds. Most households also own livestock for subsistence and income. Cows and Chickens are the most commonly owned animals, followed by ducks. Animals are primarily used for meat and dairy for purposes of subsistence, with also significant commercial usage of animals for sale of dairy and meat products in local markets.

Dwelling:

Almost all households own their own home (95.2%) which is not a significant finding, given that there is not a strong presence of hierarchal system of land ownership, where few households own most of the land on which the rest of the households live as tenants. The size of the dwellings are more varied, with an average of 2.5 rooms per

household, and 10.7 “decimal” area. A significant portion (~30%) of the households is single-room dwellings. The type of floor and fencing material are also informative in terms of household wealth. 83% of households us earth as their flooring material, whereas 17% use cement, the more expensive material. In general, households with cement foundation tend to have higher incomes. Tin was the predominant fencing material (90.8%), with a few households (5%) with cement fencing and just one household in our sample with brick fencing. From local prices, we hold that, besides earth, tin is the least expensive and most widely available fencing material. Cement and brick are far more expensive, with brick being the more expensive material.

Amenities:

Most households (73%) own fans, and the average number of fans is 1.98 per household, with the maximum number of fans being as high as 9 in one household. Many households also own televisions (45.4%), however, they are not as common as fans. Furthermore, most households own just one TV, and the highest number of TVs owned is 3 by just one household. Very few households own refrigerators (8%) and no household owns more than one. Also, all the households that own refrigerators also own at least one TV as well as fan. Most households that own at least one type of the three types of amenities, own fan and TV together (37.2%), followed closely by households that own just one type of amenity (28%) which is fans with just one exception. It should be noted however that 26.8% of households own no amenities.

Number of Income Earners

The maximum number of income earners in a household was 4, with a minimum of 0. Of the 500 households surveyed, 88 households had no income earners (17.6%), most households (63.8%) had only one income earner and 13.8% of households had two income earners. Of the 88 households with no local income earners, all have migrant family members and 78 of these households cite that remittances from migrants are crucial to their livelihood. All 88 households cite that remittances are at least at times helpful. A total of 79 of 88 households (89.8%) with no local income have at least one international migrant, while only 9 have domestic migrants only. Thus all of the households with no income have migrants, and a large majority of them have international migrants. This suggests that international remittance could be a crucial source of income for very low income households.

Eid sacrifice

Of the Muslim households in our sample, only 27.1% had done Eid sacrifice in the past year. Indicating a small proportion of muslim households had dispensable income in the past year. Of the households that sacrificed, most households sacrificed cows. We recorded the color of the animals sacrificed and used local market information based on prices according to color to see how much dispensable income a household has. This question only pertains to sacrifices made in the previous year and we use it to see the impacts of remittances.

C. <u>Migrants</u>

Sex, Age and Education:

Most households in our sample (91.4%) have migrant family members (including domestic migrants.) However most domestic migrants are females who leave home to stay with their husbands after marriage. For this paper we are concerned with international migrants. 65% of households in our sample have at least one international migrant. International migrants are almost exclusively male in our sample (with the exception of four females), and are quite young. The average age of foreign migrants is 31.4years, with the maximum age being 65. The average number of years abroad for international migrants from our sample households is 4.98years, with a maximum of 30 years abroad.

Most migrants are literate, however a large number of migrants (43.4%) have only completed primary schooling or less. A small portion of migrants (18%) however have completed secondary education and beyond, while a tiny group of migrants (3.7%) have completed either graduate (Bachelors) or Post-Graduate (Masters) education.

Destination region:

Most international migrants (56.2%) move to the Middle East, followed by nations in Southeast Asia, such as Singapore and Malaysia (see Appendix B). Overall, only 7 migrants in our sample moved to Western nations. This is likely due to the increased transportation costs due to distance, lack of resources and ability to solicit jobs from such a great distance, lack of skills for western job markets, and/ or the absence of related migrants, who generally prove crucial to helping family members settle and attain jobs in foreign countries. Migrants from Mirzapur are largely low-skilled. Most from our sample (89.8%) work as daily laborers in foreign countries, weakly followed by (6.7%)

of all migrants working in blue-collar company positions, for example, as factory managers. Almost all of the migrants in Middle East (91.7%) are employed as daily laborers.

Relationship to Household Head:

A large portion of emigrants are related as sons to the household head (31.5%) , 19.1% are related as brothers, 16.3% are related as brothers-in-law, 10.7% are related as husband, and 6.2% are related as sons-in-law.

The survey misses a key variable, the marital status of emigrants, which would have provided an informative tool for studying the loyalties of migrants who are married, and whether they remit more to a household which contains their spouse. However, using the relationship status with reference to the household head (such as husband, wife, daughter-in-law and son-in-law) we can at least determine to some extent whether marital status impacts loyalties and likelihood of remitting.

D. Utilization of Remittances

We constructed a ranking variable to determine how households most commonly utilized remittances. A rank of 1 indicates that most of the monetary amount of remittances is utilized for that purpose, and so on. By looking at what uses of remittances are ranked as 1, we find that most households use most of their received remittances to repay loans taken out to cover the costs of migration (34.1%). However, a significant amount of households (27.2%), also reported to using most of their remittances to fund

general daily consumption needs such as food and clothing. For a smaller number of households, most of the remittances also come in as gifts for family events such as weddings and births (8.5%), to fund, to fund the construction of house for dwelling (6.6%), and for health emergencies(5.9). However, purposes such as daily consumption, health-related payments and education costs are more commonly cited as the purposes for which the second or third largest portion of remittances are used. A general survey of the rank variables indicate that these households commonly use remittances for loan repayment, daily consumption, gifts for family events, health treatments payments, financing education of children, building family home, and maintaining land.

Notably, only two households cited using remitted money to recover from natural disasters, as Mirzapur, unlike other areas of Bangladesh, is not a common site for severe flooding, hurricanes or cyclones. It was also evident that at least some households did use remittances to fund progressive investments in their financial future by spending the money on education, maintaining land on which crops are grown for sale, savings, starting and maintaining businesses, migration of other family members. However, the number of households that prioritized the spending of remittances on daily food, medical or loan repayment needs (i.e. non income-generating or human-capital building purposes) is much greater.

2.3 Our Model

The survey contains data on 500 households and 460 international and 615 domestic migrants, however for our study we are mainly concerned with foreign

migrants. Of all the households surveyed, 325 (65%) households had at least one international migrant. Thus in our sample, we can find variations between both the reception of remittances and the amount of remittances. Thus we construct two separate models, the first models the likelihood that a household receives remittances from abroad (a binary variable), while the second models the perceived importance of received remittances, which is a proxy for the amount of remittances sent. Our survey does not directly ask for the amount of remittances the household receives, thus we must assume that the perceived importance of the remittances to the welfare and operation of the household correlates positively with the amount of remittances relative to the household income (if any). So we accept that if household members cite remittances as crucial to the welfare of their household, it implies that the amount of remittances makes up a significant portion (if not all) of the household's income.

The model to determine the likelihood of a household receiving remittances can be shown simply as:

$$Ri = Zix + ui$$

Where Ri is a binary variable that equals to 1 if the ith household receives remittances from abroad, and equals to 0 if the household does not receive foreign remittances. Zi is a set of regressor variables that we introduce below. X denotes the set of parameters that correspond to the regressor variables, and ui is the error term. We use a probit model to estimate this equation.

The model to determine the importance (amount of remittances) can be represented as:

$Ai = Xiy + ei$

Where Ai has five possible values where 1 equals "not important", 2 equals "at times helpful", 3 equals "helpful", 4 equals "very helpful", 5 equals "not crucial". X refers to the vector of parameter estimates, Xi is a slightly different set of explanatory variables, and ei is the error term**.** For this equation we can use ordinary least square regression.

The surveys we conducted contain information from the migrant-sending household in the origin country regarding household demographics, income, and other forms of wealth as well as some primitive migrant characteristic information. In this study, we will try to determine the factors that impact the likelihood and extent of remittances both from the perspective of the household as well as the shadow migrants. Although we have individual characteristics of migrants in our survey, we do not however know from which migrant family member the household receives remittances from. We will instead try to derive a slightly weaker indicator of who is remitting by looking at migrant characteristics that are commonly featured in households that receive remittances.

Thus we have four sets of models, two of which belong to the household perspective, and two of which belong to the migrant perspective. Within these separate perspectives, we also have two different models, one of which focuses on determining what factors impact the likelihood of a household receiving remittances, and another

focused on determining factors that affect the perceived importance (or relative size) of remittances.

2.4 Variables and Theory

We employ nested regressions in order to determine the added power of estimation due to an added layer of regressor variables. We are using a nested regression model similar to Cai (2003) in his study on determining the factors that impact the amount of remittances in urban-rural remittance transfers in China. Similar to our study, Cai also investigates the possible impact of family ties on remittance amount, and a layered regression method is helpful for detecting the relevance of an added group of family ties variables. As our study looks at a lot of similar variables, including family ties, as Cai's study, we also use nested regressions to test our models.

In our models, both the likelihood of receiving (or sending) remittances (Ri) as well as the relative amount or importance of remittances (Ai) are treated as a function of four groups of variables: migrant characteristics, household demographics, household wealth, and family ties. However, the component variables within these overall groups of variables differ slightly between the equations for the two dependent variables.

List of Variable names	
mig_age	Age of Migrant
mig_ag~q	Age of Migrant squared
non_im~u*	No formal education (migrant)
lit_im~u*	Elementary education or lower (migrant)
high_~du*	College education or higher (migrant)
yrs_ab~d	Number of years abroad

yrs_ab~q	Number of years abroad squared
labor_~u*	Labor occupation (migrant)
servic~u*	Service occupation (migrant)
famsize	Size of non-migrant (NM) household
num_son	Number of sons of household head
num_mi~a	Number of migrants from household
fem_hh	Number of female members in NM household
d_in_law*	Number of daughters-in-law of household head in NM household
grandc~d	Number of grandchildren of household head in NM household
edu_non	Number of members in NM household with no formal education
edu_high*	Number of members in NM household with college education or higher
some_c~e*	= 1 if NM household made some contribution to migrant expenses
high_cont	= 1 if NM household made high (more than ¾) contribution to migrant expenses
visi~2yr	Number of migrants from NM household who visit more than once every two years
Visi_less5	Number of migrants from NM household who visit less than once every five years
son_mig*	= 1if NM household head as at least one son migrant
son_int_mig	Number of migrant sons of NM household head
bro_mig*	= 1if migrant is brother of NM household head
bro_int_mig	Number of migrant brothers of NM household head
spouse~g*	=1 if migrant is spouse of NM household head
spouse_int_mig	Number of migrant spouses of NM household head
second~g*	= 1 if migrant is a secondary (in-laws, etc.) relative of NM household head
second_int_mig	Number of secondarily related migrants of NM household head
logper~e	Log of per capita income of NM household
HH_Inc	Number of income earners in NM household
log_l~19	Log of size of land owned by NM household
own_li~k*	=1 if NM household owns livestock
no_ame~s*	=1 if NM household owns no amenities
fantv*	=1 if NM household owns one or more fans AND TV
all_am~s*	=1 if NM household owns one or mote fans, TV and refrigerator

Migrant Characteristics

The unrestricted model regresses each dependent variable against the characteristics of the migrant such as age, education, occupation, and number of years abroad. We do not include a gender variable because, except for four migrants, all of the migrants in our sample are male. We also do not include a variable for purpose of migration, because the data on this question reveals that international migrants are invariantly migrating in search of employment. We do not have information on migrant income, however, we use a human capital model construction to deduce the experience, skill and hence possible wage level of each migrant using his education and number of years in destination country. We also can use his occupation to deduce income level, however, almost all migrants are employed in low-skilled sectors in host countries, therefore the change in income level due to different occupation types is not clear.

Besides serving as an indicator for the migrant's earning potential, the migrant's education level can also serve as a measure of the household's investment in the migrant that is particularly meaningful in the context of the family contract model. Lucas and Stark (1985) hypothesize that a higher level of education should correlate to a greater likelihood of remitting, and also higher level of remittances as a way to repay the household for their investment. However, a positive relationship between larger remittances and level of education could simply be a reflection of the higher wages afforded by higher levels of education, and a positive relationship between higher income and remittances is compatible with altruism. To account for this, Lucas and Stark also include a variable that indicates whether a migrant has grown up in the household (household young – sons, niece, nephew, grandchildren) thus increasing the probability that their education was heavily invested in by the household. Therefore, if at a certain

level of education, household young remit more than other family members, then we can better conclude that this greater level of remittances reflects repayment for the investment made by the household, and thus the family contract model is operational. In our survey, we have included variables to indicate whether a migrant is the son or secondary family member of the household head.

According to the altruistic model, higher migrant income should increase the amount of money remitted. This would predict a positive correlation between remittance sending (or receiving by the household) and migrant education level and the number of years abroad. However, as the times abroad increases, family ties may weaken, which according to the altruistic model, gradually decreases the level of remittances. The contract model on the other hand predicts that remittance levels should remain stable as long as the contract is functional, regardless of time abroad, and then suddenly drop altogether, should the contract expires as the migrant decides to settle permanently in the destination region (Dalen, Groenewold and Fokkema, 2005). The temporary or permanent nature of migration or the intention of the migrant to settle in abroad is a significant factor that determines whether the migrant will remit (Cai, 2003; Dalen, Groenewold and Fokkema, 2005).

Household Characteristics

In our second regression, we expand our model by accounting for variables that reflect the composition and structure of the household. These variables are the household size, number of females in household, level of education among household members,

number of sons, the number of international migrants, and the presence of certain household members such as daughters-in-law and grandchildren of the household head.

A large portion of migrants in our sample are related as sons to the household head in the country of origin, thus the presence of daughters-in-law or grandchild increases the likelihood of the migrant's immediate dependents being a part of the household. Altruism holds that the utility of the individual will be dependent on the consumption level of family members who live in the home country. The presence of the migrant's spouse or child in a particular household is therefore likely to increase the likelihood and amount of remittances to that household, because stronger family ties likely result in a stronger dependency of the migrant utility on the well-being of his dependents. Self-interest or coinsurance contract model would predict that the coefficient on wife and child variables would be insignificant as the migrant's wife and child are less likely to offer the migrant financial support to build up his human capital or cover transportation costs, or provide much inheritance potential. Though it is possible that the wives are also income earners, therefore the altruistic motivation to remit to maintain consumption level of family members is weaker with wives than children. A drawback of our survey is that the daughter-in-law or grandchild variables are not specific to migrants, and therefore they could be wives and children of any other son living at home or in another part of Bangladesh.

Altruism also predicts that the number of migrants should have a significantly negative coefficient because a household with more migrants is likely to receive more remittances, thus the migrant feels less individually responsible for the well-being of the

household. The mutual contract and self-interest model predicts instead that the presence of other migrants from that household should not cause any significant change to remittance payments if the remittances are meant to serve as insurance for the receiving household (Agarwal and Horowitz, 2002). For example, a migrant who is in a mutual contract with his family members should not change his remittance behavior if another member from that family migrates as well. On the other hand, altruism predicts that the number of sons will have no significant impact on remittances, while both self-interest and family-contract model predict that more sons in a household would encourage more remittance sending as each son tries to improve his own chances of inheritance (Hoddinott, 1994). If a household has only one son, then the threat of disinheritance or reduced inheritance is not as serious. However, this effect will be most pronounced for households with inheritable possessions such as land and livestock.

The size of household and the number of females in a household are two indicators of the of dependents in a household The number of females is a more precise indicator of the number of dependents, as household size may also include income earning members. Altruism predicts that remittances will rise with the number of dependants as a household with more dependents is more likely to require financial support (Hoddinott, 1994).

Family ties

We further restrict our model to control for the impact of family ties on remittances. In his study on rural-urban migrant-family ties in China, Cai(2003) assumes

that family ties are expressed through both "emotional closeness and economic connections". Families exhibit economic ties by offering financial support in the initial stages of migration, such as with traveling costs and living costs during the job search period. To capture some of this effect, we use a variable amount_contrib which indicates the proportion of migration costs covered by family members. The variable includes zero proportion, or no contribution, so that it also provides information on whether a family con tributes to the migration expenses of migrant family members.

Emotional closeness between the migrant and household is measured in our survey through the frequency of home visits. We use two variables, one of which equals to one if the migrant visits more than once every two years, and the other equals to one if the migrant visits less than once every five years.

Altruism predicts that stronger family ties, exhibited through emotional or economic connections, should increase the dependency of the migrant's utility on the household's utility, thus the migrant will be likely to remit even more. However, the increase of remittances with increased family ties is not contradictory to the predictions of self-interest or mutually beneficial contract models, as a mutual contract is often based on the family's initial economic investments in the migrant for which the migrant repays them using remittances (which can also be stated as one of the self-interest component of the mutually beneficial contract). Thus stronger economic connection, or larger economic participation by the family in the migrant's migration expenses, should lead to more remittances to repay for the investments. We have also previously stated that the mutual contract, in order to be self-enforcing, must have some altruistic motivations as well, thus stronger family ties and more emotional attachment may actually make the contract more

binding. Even a migrant who is remitting to secure his own interests is likely to be encouraged to maintain strong family ties to ensure that his property in the home region is being well-maintained, or that he is in a good position to inherit, etc.

In order to make a distinction, we follow Lucas and Stark's method of including variables based on the relationship of the migrant to the household head. We use variables to indicate whether the migrant is the son, spouse, brother or secondary family member of the household head. It is very likely that sons receive a significant amount of financial support during migration as well as human capital investment. The spouse on the other hand has strong emotional connections to the household, but it is unlikely that the household invested in the spouse's education, or skills training. Both son and spouse (all of which are male in our sample) generally face strong expectations from the household to offer financial support, however the son is more likely to inherit, and also usually receives more investment in human capital and migration. Thus the difference between their tendencies to remit should indicate whether altruism is the predominant motivation, in which case the spouse should be at least as likely as the son to remit, or if there is a mutually beneficial contract characterized by some self-interest, in which case the son should remit more. We use secondary family members to further check what happens in the absence of strong family ties and most likely economic investments.

Household wealth

Finally we restrict our model to see the impact of household wealth variables on our two dependent variables R_i and A_i. The household wealth variables are log of per-

capita income, number of (local) income earners, log of size of land owned, ownership of livestock, and ownership of NO/one, two, or three types of durable amenities (fan, TV, refrigerator). The land and livestock variables all indicate the earning potential of the household, as well as incentives for inheritance for migrant relatives. The per-capita income and amenities variables also indicate how well-off the household is. There is a danger of reverse causation with the amenities variables, and for that matter all possession variables, for our survey has no way of discerning whether their possession is a result of remittances or whether they are a part of household wealth that existed independently of remittances and possibly helped to support migration.

Regressions [shown in Appendix C] of ownership of amenities, livestock, land and size of land against presence of migrants and number of migrants, while controlling for household income, family size and number of income earners show that the presence of migrants significantly explains the possession of amenities, livestock and land. The effect is not as significant on the size of land owned, instead family size seems to strongly increase the size of land owned. Yet a survey of numbers of years of land possession and number of years migrants have been abroad seem to show that for the most part, most households owned their land prior to migration of family members. For these reasons, the direction of causality of household wealth in our sample is dubious.

Therefore, we have included it as the last set of variables in our nested regression so that it is possible to clearly see whether including this set of variables adds to the power of our model to explain the presence of remittances, and the importance of remittances. We will also divide this group into two by first including just household

income and commonly inheritable possessions such as land and livestock, and then finally the amenities.

The response of migrant remittance patterns to the household's ownership of inheritable possessions such as livestock and especially land has important theoretical implications. Firstly, in rural areas, land and livestock ownership serves as an indicator of a household's earning potential. Thus, for a migrant remitting with altruistic intentions, a household's earning potential is an important consideration and remittances would be negatively correlated to land and/or livestock ownership.

On the other hand, possessions such as land and livestock may also represent inheritable assets for younger members of the households, including migrants. In this case, self-interest motivations would predict that a migrant would be more likely to remit, and remit in larger amounts to an asset-owning household, with the hopes of securing inheritance rights. Hoddinott proposes a model where households use land disinheritance as a bargaining tool to ensure that migrants continue remitting once they are abroad and enjoying their income. Thus the inheritance of land is a part of a mutual contract between the household and migrant , as both parties gain from migration, and also it fits the self-interest model, as the migrant is remitting to secure his wealth or inheritance back home. Thus the more land a household owns, the more bargaining power it has and the more remittances that household receives. This effect is borne out in Hoddinott's empirical study on remittance receiving households in…

However, this bargaining power of possessions is conditional on the migrant eventually intending to return, the migrant not already owning his share of land, and also, as previously mentioned, the migrant not being the only son in which case he has very

little reason to take the threat disinheritance or reduced inheritance seriously. Our survey unfortunately does not have a way to discern whether land ownership has already been bestowed on migrants, or if the migration is intended as temporary or permanent. However the migrants in our sample are almost exclusively low-skilled, and migrate mainly to work as labor in the Middle East and Southeast Asia regions. This set of migrant characteristics fits the profile of most temporary migrants out of Bangladesh.

Altruism would instead predict that households with less land would receive more remittances, as these households require it more and thus a migrant whose utility depends on the utility of the household, would remit more.

However, it is important to consider that migration is a hefty investment, especially in rural areas where migrants do not receive much support from governmental migration or labor departments, or other labor recruiting agencies. Therefore, the positive relationship between family wealth (such as land) and remittances could simply be a reflection of the fact that under heavy costs of migration, wealthier households are able to send migrants and thus receive remittances, while less wealthy households are not able to send family members abroad which precludes any chances of receiving remittances. Thus, even if most potential migrants in an area (without migration support or resources) would remit out of altruistic motivations, it is possible that due to general lack of access of low-income households to migration opportunities that only wealthier households with a relatively large amount of possessions are able to afford migration. Thus we will pick up a positive correlation between remittances and land ownership which indicates a family contract model or self-interest motivations for remittances.

However, the lack of migration out of low-wealth households can also be explained by self-interest or mutual contract model where parents of households without land do not support the migration of family members because they fear that, without land, they do not have enough bargaining power to secure remittances from household members once they are away (Hoddinott, 1994).

If remittances are indeed motivated by altruism then households with lower incomes or less land and livestock ownership are more likely to receive remittances. Altruism also predicts that remittances will decrease with household income. Yet it is also interesting to consider that this effect could also be because families with a sufficient level of income, and a large number of local income earners no longer feel the need to pursue migration. Stark and Taylor (1986) find that households prefer to have family members employed in both the local economy as well as abroad (see also Hoddinott, 1994), and migration is just one aspect of the household's labor distribution portfolio. In this situation the presence of local income earners should not correlate negatively with the number of migrants, or decrease remittances. On the other hand, altruism seems to imply a negative relationship between remittances and the number of local income earners, as a household that earns a sufficient level of local income is less in need of migrant remittances.

On the other hand, if household income is positively linked to reception of remittances and relative size of remittances, then we still cannot make an absolute prediction that self-interest is functional. This effect could also be a reflection of the large initial costs of migration which pose as a barrier against migration for low-income

households. If there is a mutual contract or self-interest motivations then we should also expect to see positive links between inheritable possessions, number of adult sons, and education of migrants who grew up in that household (household young), and remittances (Hoddinott, 1994; see also Lucas and Stark, 1985)

Interestingly, regressions of household wealth variables against the presence of migrants and also the number of migrants from a household, seems to show that the impact of household wealth on the likelihood of having a migrant family member are not very statistically significant [see Appendix D]. The coefficients indicate however that land ownership and income are both negatively correlated to migration, meaning that lower income and less landed households are more likely to have migrants. A similar result occurs when we change the left-hand side variable to number of migrants. This indicates that in Mirzapur, migrants from lower income households migrate in order to increase their own, and possibly the household's, income. Our regressions of remittance reception against household per-capita income will clarify whether lower income households also receive more remittances.

On the other hand, ownership of amenities seems to be positively impact the likelihood of having migrants however this effect is not significant. It is positively significant however when the number of migrants is the dependent variable. The conclusions from this are unclear as we would expect amenities to behave in the same way as household income with respect to migrants. It is possible that this positive relationship reflects the reverse causality previously mentioned, in which case migration is positively linked to a greater ownership of amenities.

However, the ownership of amenities is quite significantly positively correlated to the log of household income, even if we account for the number of income earners, number of migrants, and household size [see Appendix C].But, the ownership of amenities is a binary variable that equals to one even if a large household owns only one fan, thus it is not a strong indicator of household income or wealth. If we change the variable to *all_amenities*, which equals to one if a household owns at least one fan, one TV and one fridge (an atypically high amount of amenities for rural areas), then the impact of amenities and the number of migrants becomes statistically very insignificant.

2.5 Analysis and Discussion

Tables 1 and 2 provide the results for migrant and household level estimations of the likelihood of a migrant remitting. Tables 3 and 4 provide the results for the migrant and household level estimations for the importance of remittances to the household. We use five different columns in each table to represent five nested equations, where each successive column adds more variables to the last equation. We add variables catergotrically in the following order: migrant characteristics, household demographics, family ties, household wealth excluding amenities and finally household wealth including amenities. In this section we will analyze how these sets of variables respond in each of our different models, and what conclusions we can derive regarding the motivation of remittances, from their estimations of Ri (binary variable of the likelihood of a household receiving remittances) and Ai (a variable ranging from 1 to 5, indicating the importance or extent of remittances).

Table 1 :Migrant Level

Probit of whether International Migrants send remittances to the household

Dependent Variable: R_abroad = 1 if international migrant sends any amount of remittances to household.

P-values in parentheses

	Col A	Column 1	Col B	Column 2	Col C	Column 3	Col D	Column 4	Col E	Column 5
Migrant age	.0078249 (0.339)	.0079971 (0.338)	.0056529 (0.39)	.0050444 (0.445)	.0029512 (0.26)	.0028147 (0.267)	.0019479 (0.942)	.0005814 (0.982)	-.0005415 (0.981)	.0002402 (0.991)
Migrant age squared	-.0001371 (0.223)	-.000139 (0.222)	-.0000809 (0.371)	-.0000701 (0.438)	-.0000383 (0.287)	-.0000363 (0.293)	-5.28e-06 (0.989)	.0000302 (0.937)	.0000316 (0.922)	.0000289 (0.928)
No formal education (migrant)		.0024009 (0.966)		-.0395635 (0.424)		-.0097769 (0.603)		-.4617204 (0.122)		-.3904932 (0.163)
Just Literate (migrant)		.0059659 (0.891)		-.0244342 (0.46)		-.0090479 (0.439)		-.1284528 (0.197)		**-.1236076 (0.14)**
High eduction (migrant)		.0020822 (0.974)		.017403 (0.715)		-.0159846 (0.489)		**-.5973141 (0.036)**		**-.5600733 (0.047)**
Years abroad	**.0204831 (0.012)**	.0204414 (**0.012)**	**.01438 (0.024)**	.0145909 (**0.021)**	**.005852 (0.023)**	**.0054642 (0.026)**	.0227557 (0.447)	.0310874 (0.307)	.0205875 (0.432)	.0295215 (0.263)
Years abroad squared	-.0005696 (0.118)	**-.0005672 (0.12)**	-.0004331 (0.133)	-.0004564 (**0.109)**	**-.0001953 (0.093)**	**-.0001803 (0.107)**	-.0007738 (0.654)	-.0010274 (0.549)	-.0007724 (0.574)	-.0010759 (0.416)
Labor occupation	.272619 (0.161)	.2699717 (0.167)	.3890774 (0.149)	.3655461 (0.169)	.3838782 (0.225)	.3899716 (0.236)	dropped	dropped		dropped
Service Occupation	**.1302014 (0.107)**	**.1301761 (0.11)**	**.1004562 (0.094)**	**.095847 (0.124)**	.0321816 (0.143)	.0304162 (0.156)	dropped	dropped		dropped
Family size (HH)			-.0084709 (0.312)	-.0090413 (0.276)	.0054695 (0.202)	.0048145 (0.244)	-.0035444 (0.941)	-.0102907 (0.816)	.0062262 (0.884)	-.0006551 (0.987)

Number of sons (HH)			.0056006 (0.692)	.0063137 (0.654)	**-.0107507** **(0.082)**	**-.0095139** **(0.107**)	-.0816562 (0.137)	-.0617503 (0.27)	-.0780811 (0.126)	-.0622816 (0.228)
Number of migrants			**.0353017** **(0.024)**	**.0338593** **(0.028)**	**.0172785** **(0.005)**	**.0165352** **(0.005)**	-.0072989 (0.902)	.0269048 (0.661)	.00294 (0.955)	.0266461 (0.617)
Number of females in HH (fem_hh)			.0152658 (0.175)	.0146517 (0.195)	-.0042115 (0.356)	-.0034369 (0.434)	-.0312791 (0.395)	-.0140282 (0.706)	-.0319831 (0.379)	-.0182092 (0.618)
Number of daughters-in-law in HH			**.1399533** **(0.026)**	**.1388337** **(0.027)**	.0330251 (0.316)	.0324751 (0.311)	.0108717 (0.973)	-.0981174 (0.817)	.0317741 (0.91)	-.1276047 (0.782)
Number of grandchildren in HH			.0022353 (0.948)	.0039376 (0.909)	-.0072976 (0.626)	-.007131 (0.618)	-.077201 (0.67)	-.0477229 (0.794)	-.0501963 (0.772)	-.0143327 (0.937)
No formal education (HH)			.0200923 (0.138)	**.022333** **(0.102)**	.0038601 (0.474)	.0039566 (0.449)	-.0076675 (0.87)	-.003537 (0.94)	-.0142995 (0.742)	-.0079684 (0.852)
High level of education (HH)			**-.0665708** **(0.01)**	**-.0732793** **(0.005)**	**-.0399119** **(0)**	**-.0377801** **(0)**	**-.5846395** **(0.01)**	**-.6523019** **(0.01)**	**-.5125579** **(0.018)**	**-.5786688** **(0.014**)
Some HH contribution to migration costs					.0102905 (0.259)	.0098236 (0.253)	.0876734 (0.268)	.0840061 (0.274)	.0370355 (0.645)	.0510356 (0.498)
High HH contribution to migration costs					**.1136269** **(0)**	**.1111927** **(0)**	dropped	dropped		dropped
Visit once every 2 years or more (migrant)					.0080188 (0.368)	.0074935 (0.376)	.1552508 (0.221)	.026532 (0.843)	.155416 (0.183)	.0397697 (0.753)
Visit once every 5 years or less (migrant)					.0067048 (0.722)	.006894 (0.699)	dropped			
Son of HH head (migrant)					-.0022842 (0.909)	-.0034331 (0.86)	.1187558 (0.302)	.1161726 (0.319)	.0992495 (0.272)	.0973512 (0.287)
Brother of HH head (migrant)					**-.1078505** **(0)**	**-.1037779** **(0)**	-.2673622 (0.137)	-.1513257 (0.389)	-.2072897 (0.225)	-.0818294 (0.6)

Spouse of HH head (migrant)					**.0184716** **(0.13)**	.0169666 (0.14)	-.4392859 (0.358)	-.6476278 (0.202)	-.367916 (0.378)	-.5484241 (0.238)
Secondary relative of HH head (migrant)					**-.109937** **(0)**	**-.1094385** **(0)**	**-.492184** **(0.001)**	**-.575974** **(0.001)**	**-.5375767** **(0.001)**	**-.622225** **(0.001)**
Log per capita income (HH)							**-.1679818** **(0.009)**	**-.184626** **(0.006)**	**-.1471721** **(0.01)**	**-.1654016** **(0.008)**
Number of income earners (HH)							.1219905 (0.207)	.1093067 (0.27)	.0809885 (0.322)	.0805891 (0.35)
Log of size of land (HH)							.0607949 (0.143)	.0437646 (0.308)	.04629 (0.205)	.0377738 (0.313)
Own livestock (HH)							.1842961 (0.158)	.1825461 (0.165)	.2198743 (0.125)	.1935369 **(0.15)**
No Amenities (HH)									.0699164 (0.358)	.071386 (0.347)
Own fan and TV (HH)									.1141078 (0.206)	.0939897 (0.266)
Own all 3 amenities (fan, tv, fridge) (HH(									-.0219267 (0.869)	-.0446981 (0.765)
		N=458		N=458		N=458		N=99		N=99

Table 2:Household Level

Probit of whether International Migrants send remittances to the household

Dependent Variable: R_abroad = 1 if international migrant sends any amount of remittances to household.

	Column 1	Column 2	Column 3	Column 4	Column 5
Migrant age					
Migrant age squared					
No formal education (migrant)	-0.08015 (0.438)	-0.06207 (0.578)	.0172589 (0.873)	-.4760538 (0.081)	-.4602994 (0.093)
Just Literate (migrant)	-0.05687 (0.497)	-0.07125 (0.446)	-.0375445 (0.669)	-.1140301 (0.593)	-.120514 (0.573)
High eduction (migrant)	-0.11907 (0.352)	-0.06961 (0.62)	-.0775148 (0.551)	-.3719214 (0.027)	-.373132 (0.028)
Years abroad					
Years abroad squared					
Labor occupation	0.712285 (0)	0.822459 (0)	.6882887 (0.019)	.6804109 (0.005)	.6834746 (0.005)
Service Occupation	0.918615 (0)	1.141548 (0)	1.029685 (0.003)		
Family size (HH)		-0.05254 (0.014)	-.0007276 (0.978)	-.1126909 (0.14)	-.1184628 (0.13)
Number of sons (HH)		0.06921 (0.064)	-.0359382 (0.376)	-.0137531 (0.893)	-.0007832 (0.994)
Number of migrants		-0.12217 (0.537)	-.2820115 (0.353)		
Number of females in HH (fem_hh)		0.0685 (0.023)	-.0074108 (0.798)	.0058733 (0.933)	.0138989 (0.849)

Number of daughters-in-law in HH		0.209643 (0.032)	.2043931 (0.081)	.5484961 (0.048)	.5553967 (0.047)
Number of grandchildren in HH		0.076956 (0.276)	-.0237659 (0.779)	-.1107149 (0.583)	-.1120937 (0.586)
No formal education (HH)		-0.0232 (0.447)	-.0258768 (0.393)	-.0311508 (0.68)	-.0243745 (0.753)
High level of education (HH)		-0.16606 (0.027)	-.1405327 (0.036)	-.0474943 (0.721)	-.0503095 (0.718)
Some HH contribution to migration costs			.1339933 (0.035)	.1948301 (0.183)	.1792968 (0.245)
High HH contribution to migration costs			.4400668 (0)	Dropped	dropped
Visit once every 2 years or more (migrant)			.0339647 (0.649)	.0905803 (0.664)	.1002788 (0.644)
Visit once every 5 years or less (migrant)			.159837 (0.376)	Dropped	Dropped
Son of HH head (migrant)			.0815179 (0.463)	.1397229 (0.503)	.1399193 (0.52)
Brother of HH head (migrant)			.0136635 (0.836)	.2830572 (0.127)	.2730731 (0.148)
Spouse of HH head (migrant)			.2686368 (0)	-.0745739 (0.843)	-.078741 (0.836)
Secondary relative of HH head			.1997553	.4221329	.4162453

(migrant)			(0.018)	(0.034)	(0.037)
Log per capita income (HH)				-.1352137 (0.156)	-.1343679 (0.195)
Number of income earners (HH)				.0324031 (0.807)	.0264859 (0.843)
Log of size of land (HH)				.0282965 (0.685)	.0227299 (0.749)
Own livestock (HH)				.1797355 (0.196)	.183321 (0.193)
No Amenities (HH)					-.0422905 (0.805)
Own fan and TV (HH)					.0324799 (0.853)
Own all 3 amenities (fan, tv, fridge) (HH)					-.0117451 (0.965)
	N=500	N=500	N=500	N=130	N=130

Table 1 shows the results of probit models used to estimate the likelihood of a household receiving remittances from abroad. Column 1 looks at the likelihood of an international migrant remitting (Ri) solely as a function of migrant characteristics. One of the predictions of the self-interest model for migration is that the decision to migrate and remit can all be explained using migrant characteristics. Agarwal and Horowitz (2002) developed two sets of models to determine whether remittances to Guyana more closely modeled by pure self-interest (characterized as risk-sharing contract) or pure altruism. They used a dataset of only households that had migrant family member(s), and for their pure self-interest model, they included only migrant characteristics. They reasoned that the contract between the migrant and the household should be independent of the contract made between other migrant family members and the household.

In column 1, only the number of years abroad and the years-abroad-squared variables are significant, and the variable indicating that the migrant is employed in the service sector is somewhat significant. The number of years abroad has a positive coefficient, whereas the squared variable has a negative coefficient. This indicates that after a certain number of years abroad, the marginal effect of additional years abroad on the likelihood of receiving remittances is negative. This can be explained by a weakening of ties with the family after the migrant has lived a certain number of years abroad. The positive impact of the linear variable, the number of years abroad, likely reflects the job and skills experience of the migrant, as well as his ability to settle and assimilate to some degree. All of this should increase his ability to secure a job, or a higher-paying job. The variable indicating that the migrant is employed in the service sector is positive and almost significant, although the variable for migrants employed in the labor sector has a

larger coefficient, though it is not significant. We can conclude that migrants employed in either labor and service sectors are more likely to remit than migrants who are not employed.

We have included columns A to E in Table 1 to control for the likely correlation between the migrant's education level and the number of years abroad, and job type. A higher pre-migration education is likely to equip the migrant with the skills needed to attain the kind of job/opportunity to remain in the host country for a longer amount of time. Thus, in colums A to E we excluded the migrant education variables in each of the layers of regression. However, we see that the effects of removing the education variables on the coefficients or significance levels are not remarkable. Thus, pre-migration education is not significantly correlated to the number of years a migrant stays abroad or what kind of jobs they get, in reference to whether or not a migrant remits. Therefore, in further discussions of Table 1 we will just focus on columns 1 to 5.

Table 2 also shows the results of a probit model used to determine how different variables impact the likelihood of a migrant sending remittances, however, unlike table 1, this model is from the perspective of the household. Column 1 of this table also includes just migrant characteristics, and we see that, both labor and service sector employment variables are positive and significant, with the service sector variable being slightly more positive. However this could be incorporating the impact of the years abroad variable which was positive and significant in table 1, because it is likely that a migrant that has been settled in the country for a longer time, or has more experience working in the country, would be able to move up into a service sector job – most likely going from a

factory worker, to a floor manager, etc. We cannot include the years abroad variables in table 2 because we no longer have individual migrant level data.

We will continue to analyze tables 1 and 2 together as they are both regressed against Ri with a similar set of variables. In column 2, both models include migrant and household demographics. The number of years abroad, and years abroad squared in the migrant perspective and service and labor employment in the hosehold perspective still continue to be significant , and retain the same signs. But we also see that, in both perspectives, adding household characteristics has explanatory power. The variables d_in_law (the number of daughters-in-law of the household head living in the household)and high_edu (the number of household members with beyond secondary education) are significant in both household and migrant perspectives. The coefficient on d_in_law is positive and negative on edu_high. Both of these are consistent with altruistic motivations because the presence of daughter-in-law increases the likelihood that the migrant's wife lives in the household. The strong family ties that generally result from marriage most likely increases the dependence of the migrant's utility on the utility of the household, thus increasing his inclination to remit to that household. On the other hand, we can look at edu_high as an indication of the houesehold's earning potential. Thus the larger this variable is, the more a household is likely to earn locally, and thus the altruistic migrant does not need to remit in response to low household need. However, this negative relationship between edu_high and Ri could possibly be due to the fact that households who have enough earning capacity at home do not usually send migrants abroad, hence causing the negative relationship between remittances and edu_high. However, a probit regression of household education levels and other wealth and income

variables against the likelihood of having at least one international migrant [see Appendix E] shows that none of these variables are at all significant to the presence of migrants (though the sign on the edu_high coefficient is negative while the the signs on edu_non and and edu_literate - indicating the number of household members who have no education or are just literate - are positive).

Also, in the migrant perspective, the number of migrants within a household has a statistically significant positive impact on whether the migrant will remit. Unlike the previous findings, this is contrary to the expectations of altruism, which assumes that a migrant is concerned with the well-being of the family and thus a larger number of migrants should lower the need to remit (Agarwal and Horowitz, 2002). We can also view this from a self-interest point of view where the migrant is concerned with his inheritance or good reputation back home, and thus migrants from multiple-migrant households feel more of a need to remit in order to compete to secure their good name with the household. The coexistence of the negative high household education variable and the positive number of migrants variable makes any conclusion about the migrant motivations uncertain. It is also possible that the positive sign on the number of migrants variable is not a reflection of self-interest, but rather the networking services offered by having family members abroad. Perhaps due to networking effect, migrants from multiple-migrant families find jobs faster, or are able to secure better jobs and thus can remit. We need to see how the coefficients on these variables change when we account for household wealth.

Three of the other significant variables also have contradictory implications regarding migrant motivations. We find that family size has a negative impact, number of

sons has positive impact, while the number of females also has a positive impact. The first two are both contrary to altruism and in keeping with a contract model as discussed in our theory and variable section. This is because an altruistic remitter would remit more to a household with more dependents, while the number of dependents is predicted to not have a statistically significant impact on whether a migrant remits in the contract model. The number of sons has been treated in other research articles as a variable that indicates bargaining power of the parent household due to competition between sons of the household for their share of inheritance. Thus a household with more sons is more likely to attract remittances, than a household with just one son. However, as inheritance is not a concern for the altruistic remitter, the number of sons should not have a significant impact. The variable fem_hh, on the other hand, indicates the number of females in the household. We assumed that in a region where women are largely homemakers and out of the labor force, that the number of females in a household would be an indication of the number of non-earning dependents. The fact that a household with more female members are more likely to receive remittances again indicates altruism. However, it should be noted that the number of females in the household variable becomes insignificant in the following layered regression when we include household wealth. It is possible also that family size and fem_hh correlate strongly and therefore skewed the results.

We see that by adding household characteristics we get mixed findings regarding altruism and self-interest contract models. Column 3 includes measures of family ties into our model. The education variable, edu_high continues to be negative from both perspectives. The number of sons, however, is now significant in the migrant

perspective with a negative coefficient, whereas it is no longer statistically significant under the household perspective (though it has also switched signs to a negative coefficient.) Thus if we hold family ties variables - such as amount of the household's contribution in migration costs, relationship of migrant to household head and frequency of visits - the num_son variable loses much of its explanatory power. Especially in the household perspective, the variable son_mig, which is the number of migrants that are sons of the household head, is directly correlated to num_son which is the total number of migrant and non-migrant sons, thus skewing the coefficients on both. To account for this direct collinearity, in Appendix F we ran the probit model without num_son but we found that this does not change the sign, significance, or quantity of the son_mig coefficient much. In any case, from the migrant perspective, if we account for family ties, we see that migrants remit less as the number of sons increases, which is an indicator of altruism. However, this effect fails to hold in the next layered model when we account for household wealth.

Looking at the variables for family ties, we cans see that the variable high_contribution (denoting that the household can contributed a large portion of migration costs for migrants from the family [though we have no way of knowing how much contribution was made for each individual migrant]) is positive and statistically significant in both the migrant and household perspectives. In our discussion on variables and theory we stated that this was a measure of the economic connection between the migrant and the household. A positive coefficient on this variable is consistent with both altruism, which is positively associated with strong family ties, and family contract

model, in which the migrant remits to repay the household for its investment in his migration.

The variables for migrants that are brothers (bro_mig) and secondary family members (secondary_mig), are both significantly negative in the migrant perspective. The variable for spouse_mig (migrant that is the spouse of the household head (mainly husbands)) is weakly significant and positive. This demonstrates the family ties expectations of the altruistic model where closely related migrants, such as spouse are more likely to remit, while secondary family members are more likely to not remit. While brothers are closely related, the negative relationship between Ri and bro_mig can be explained by the fact that the brother most likely has his own separate household to send remittances to, thus according to altruism his utility is more dependent on the other household.

However, in the household perspective we find that the secondary_mig variable is both siginificant and positive, along with spouse_mig, More interestingly, the secondary_mig variable retains its significance and positive sign even as we restrict the model more and more. This unlikely finding seems to conflict with altruism which would predict that strong family ties would encourage remittances. Instead in the household perspective, the positive coefficient on secondary_mig is second in magnitude, only to spouse_mig, and is larger than son_mig. One explanation for this is that the secondary_mig variable constitutes those members of the household, for whom the household is unlikely to have made many human capital investments (i.e. members that are not directly related to the household head.) This includes sons-in-law of the household head. Thus the strong positive coefficient could be a reflection of the strong

ties of marriage, just like the spouse_,mig variable. Unexpectedly small coefficient on son_mig indicates that remittances do not serve as repayment for investments in education and other human capital building costs, which is one of the main components of the family contract model.

Columns 4 and 5 both embrace household wealth into the model. In column 4 we include the log of per-capita income, number of income earners, log of size of land owned, and ownership of livestock. In column 5, we also add the variables fantv (for ownership of fan and TV) and, all_amenities (ownership of fan, TV and refrigerator) and no_amenities. The reason for the distinction between the two sets of household wealth variables is because the regressions show that the ownership of amenities is also likely to be caused by remittances, rather than being a factor that drives remittances. Even land and livestock ownership display reverse causality, (seem appendix C), however these factors also have a lot of theoretical implications, thus we chose to include them as the last set of variables in our model. Indeed we see the log likelihood value of our model plummet from column 3 to column 4.

Adding household wealth variable reduces the significance of both variables for the number of sons and number of migrants though they retain their negative and positive signs respectively. The log of per-capita income of the household is also significantly negatively related to the likelihood of migrant sending remittances. This is a strong indicator of altruism. Although, the strength of this indicator is weakened by the fact that it is not corroborated by the coefficient on the log of size of land owned by the household. Altruism predicts that remittances are either not significantly impacted by land ownership, and may even decrease in response to an large level of household wealth,

while the self-interest driven family contract strongly predicts that the migrant will be more likely to remit to a household with more inheritable assets. The coefficient on log_landsize in our model is positive, although, it is not at all significant, which may still merit the altruistic implications of the per-capita income coefficient.

From the household perspective, both of the variables for no formal education for the migrant, and high level of migrant education yielded statistically significant negative coefficients. The coefficient on the variable that includes migrants who are just literate is also negative however it is not statistically significant. The coefficient is most negative on the no education variable. This seems to indicate that households with migrants that have no formal education, or are just able to read and write, or even migrants with high level of education are less likely to receive remittances than households with migrants with a medium level of education (completion of secondary schooling only). It is difficult to derive a clear conclusion from this, however a possible explanation is that highly educated migrants are more likely to move for longer time period and thus eventually lose connection with the household, whereas non educated or low-educated (just literate) migrants may face a lot of difficulty getting a job overseas and are thus unable to remit.

The variable daughter in law is once again positive and significant, although grandchild is negative and insignificant. This is most likely because the variable grandchild includes all the children in a household that are related to the household head as grandchildren. Because a household is likely to have more children than daughters-in-law, the grandchild variable is more likely to be not as significant. Nevertheless, these findings conflict with the findings from…. Research, in which the child variable is more positive and stat sig. they explain that this is because the wife may also be an earner,

therefore the need to provide for the wife is not as present as the need to provide for one's child. However, the data in that study was collected from migrants, thus the variable for child only included the migrant's children and were thus much more relevant. Our data is collected from receiving households and is thus missing that individual migrant distinction.

It is also interesting that neither per capita income nor land size variables are statistically significant from the household viewpoint. Another puzzling outcome is that once again the coefficient on the number of migrants, who are secondary relatives to the household head, is negative and significant from the household viewpoint, whereas from the migrant viewpoint, the same variable has a positive and significant coefficient. It is worth noting that the secondary_mig coefficient has slightly different interpretations in the migrant and household viewpoints. At the migrant level, secondary_mig is a binary variable that equals to one if the migrant is a secondary family member of the household head. Whereas, at the household level, the secondary_mig variable is not binary. Rather it represents the number of migrants in a household that are secondary relatives to the household head. Thus a negative relationship between secondary_mig and Ri at the household level can be interpreted as the effect of having one more secondarily related migrant. Thus while secondary_migrants are likely to remit, it does not necessarily have to directly imply that a household with many migrants who are secondary relatives is more likely to receive remittances than a household with more of other relatives for migrants, such as sons, fathers, spouses, etc. However, the implication of this on theory or motivations is still unclear.

Lastly, we see that adding the amenities variables made no significant changes to the significance and signs of any of the variables.

The importance of remittances (*Ai*)

Table 3: Migrant Level

Regression of importance of remittances received (all variables are conditional on household already receiving positive remittances from abroad)

Variable: Imp = 1 if Not important, 2=At times Helpful, 3=Helpful, 4= very helpful, 5=crucial

	Col A	Column 1	Col B	Column 2	Col C	Column 3	Col D	Column 4	Col E	Column 5
constant	**5.509 (0)**	**5.221736 (0)**	**4.08 (0)**	**3.932583 (0.001)**	**3.487 (0.001)**	**3.651494 (0.001)**	**6.067 (0)**	**6.535499 (0)**	**6.107 (0)**	**6.300965 (0)**
Migrant age	-0.0423 (0.36)	-0.03466 (0.466)	-0.023 (0.592)	-0.01364 (0.76)	-0.029 (0.47)	-0.03026 (0.463)	-0.04 (0.609)	-0.04598 (0.558)	-0.063 (0.41)	-0.06284 (0.418)
Migrant age squared	0.0008 (0.203)	0.000725 (0.274)	6E-04 (0.3)	0.000507 (0.413)	5E-04 (0.326)	0.000557 (0.325)	6E-04 (0.627)	0.000559 (0.634)	1E-03 (0.386)	0.000937 (0.42)
No formal education (migrant)		0.137804 (0.629)		-0.05314 (0.846)		-0.18611 (0.464)		0.037264 (0.931)		0.124304 (0.776)
Just Literate (migrant)		0.196216 (0.354)		0.037667		-0.16819		-0.38041 (0.134)		-0.16506 (0.535)

				(0.852)		(0.362)				
High eduction (migrant)		0.056391 (0.843)		-0.20029 (0.471)		-0.1418 (0.578)		-0.21371 (0.563)		-0.13474 (0.711)
Years abroad	0.0133 (0.714)	0.011978 (0.743)	-0.006 (0.855)	-0.00436 (0.899)	-0.008 (0.794)	-0.00537 (0.865)	0.015 (0.733)	0.017214 (0.704)	7E-04 (0.987)	0.002977 (0.948)
Years abroad squared	-0.001 (0.512)	-0.00095 (0.551)	-5E-04 (0.741)	-0.00061 (0/684)	4E-04 (0.757)	0.000279 (0.843)	1E-04 (0.942)	-3.7E-05 (0.985)	4E-04 (0.849)	0.000223 (0.908)
Labor occupation	-1.157 (0.211)	-1.14633 (0.218)	-0.231 (0.791)	-0.25555 (0.772)	-0.355 (0.655)	-0.38495 (0.632)	0.154 (0.594)	0.207467 (0.481)	0.091 (0.756)	0.103631 (0.735)
Service Occupation	-1.398 (0.142)	-1.3339 (0.167)	-0.368 (0.682)	-0.36238 (0.691)	-0.34 (0.676)	-0.41394 (0.618)	(dropped)	(dropped)	(dropped)	(dropped)
Family size (HH)			**-0.271 (0)**	**-0.27375 (0)**	**-0.224 (0)**	**-0.22484 (0)**	**-0.096 (0.106)**	**-0.09986 (0.094)**	**-0.096 (0.103)**	**-0.09718 (0.012)**
Number of sons (HH)			**0.26 (0.001)**	**0.260231 (0.001)**	0.107 (0.149)	0.114727 (0.127)	-0.002 (0.981)	0.031084 (0.759)	0.074 (0.456)	0.083998 (0.408)
Number of migrants			0.066 (0.37)	0.063576 (0.39)	**0.257 (0.001)**	**0.262842 (0.001)**	**0.37 (0.003)**	**0.392533 (0.002)**	**0.365 (0.002)**	**0.375527 (0.002)**
Number of females in HH (fem_hh)			**0.316 (0)**	**0.318593 (0)**	**0.297 (0)**	**0.303188 (0)**	**0.161 (0.014)**	**0.167991 (0.013)**	**0.179 (0.005)**	**0.179992 (0.007)**
Number of daughters-in-law in HH			0.116 (0.427)	0.104084 (0.484)	0.045 (0.738)	0.028415 (0.834)	0.243 (0.213)	0.24599 (0.22)	0.131 (0.504)	0.141784 (0.482)
Number of grandchildren in HH			**0.204 (0.082)**	**0.204341 (0.083)**	**0.191 (0.072)**	**0.196421 (0.065)**	0.022 (0.88)	0.032822 (0.823)	0.041 (0.772)	0.040057 (0.782)

No formal education (HH)			**0.122 (0.069)**	**0.127769 (0.063)**	0.088 (0.152)	0.095924 (0.127)	-0.071 (0.433)	-0.08325 (0.363)	-0.008 (0.931)	-0.02002 (0.829)
High level of education (HH)			0.265 (0.149)	**0.325296 (0.096)**	-0.097 (0.567)	-0.11421 (0.529)	-0.082 (0.726)	-0.10021 (0.692)	**-0.412 (0.104)**	-0.37857 (0.166)
Some HH contribution to migration costs					0.145 (0.411)	0.147299 (0.409)	0.187 (0.42)	0.172299 (0.462)	0.204 (0.366)	0.189113 (0.412)
High HH contribution to migration costs					**1.041 (0)**	**1.042982 (0)**	**1.151 (0)**	**1.164972 (0)**	**1.193 (0)**	**1.199544 (0)**
Visit once every 2 years or more (migrant)					0.07 (0.5)	0.067625 (0.517)	**-0.3 (0.064)**	**-0.31836 (0.052)**	**-0.352 (0.027)**	**-0.35877 (0.027)**
Visit once every 5 years or less (migrant)					**-0.552 (0.003)**	**-0.56042 (0.004)**	-0.445 (0.113)	**-0.47907 (0.095)**	**-0.445 (0.106)**	**-0.45205 (0.11)**
Son of HH head (migrant)					0.188 (0.286)	0.175005 (0.327)	0.188 (0.387)	0.190104 (0.391)	0.179 (0.398)	0.182986 (0.4)
Brother of HH head (migrant)					**0.432 (0.067)**	**0.407018 (0.088)**	**0.758 (0.029)**	**0.75356 (0.035)**	**0.693 (0.043)**	**0.702323 (0.05)**
Spouse of HH head (migrant)					**1.232 (0)**	**1.269896 (0)**	0.457 (0.443)	0.666489 (0.273)	0.59 (0.315)	0.673179 (0.262)
Secondary relative of HH head (migrant)					-0.261 (0.267)	-0.27253 (0.255)	-0.329 (0.306)	-0.33392 (0.313)	-0.118 (0.718)	-0.13208 (0.699)
Log per capita income (HH)							**-0.377 (0)**	**-0.37697 (0)**	**-0.342 (0.001)**	**-0.34245 (0.001)**
Number of income earners (HH)							-0.268 (0.181)	-0.30426 (0.134)	-0.255 (0.193)	-0.26928 (0.178)

Log of size of land (HH)							-0.092 (0.328)	-0.1142 (0.231)	-0.132 (0.159)	-0.14241 (0.136)
Own livestock (HH)							0.256 (0.362)	0.2533 (0.371)	0.274 (0.335)	0.264714 (0.362)
No Amenities (HH)									-0.064 (0.812)	-0.0259 (0.926)
Own fan and TV (HH)									-0.018 (0.94)	-0.00643 (0.98)
Own all 3 amenities (fan, tv, fridge) (HH(									**1.01** **(0.006)**	**0.945962** **(0.014)**
		N=327		N=327		N=327		N=149		N=149

Table 4:Household Level

Regression of importance of remittances received (all variables are conditional on household already receiving positive remittances from abroad)

Dependent Variable: Imp = 1 if Not important, 2=At times Helpful, 3=Helpful, 4= very helpful, 5=crucial

	Column 1	Column 2	Column 3	Column 4	Column 5
constant	**3.852075** **(0)**	**3.980335** **(0)**	**2.802307** **(0)**	**5.236776** **(0)**	**4.96887** **(0)**
Migrant age					
Migrant age squared					
No formal education (migrant)	0.130838 (0.63)	-9.57E-06 (1)	-0.31521 (0.168)	-0.14252 (0.762)	-0.05348 (0.911)
Just Literate (migrant)	0.196021 (0.283)	0.050889 (0.786)	-0.04561 (0.764)	-0.14058 (0.572)	-0.00796 (0.977)
High eduction (migrant)	0.064984 (0.803)	-0.06665 (0.802)	-0.09386 (0.649)	-0.18349 (0.608)	-0.14997 (0.674)
Years abroad					

Years abroad squared					
Labor occupation	-0.09723 (0.627)	-0.0747 (0.907)	0.007136 (0.989)	0.114295 (0.723)	0.046263 (0.889)
Service Occupation	-0.27306 (0.244)	-0.23358 (0.726)	-0.14158 (0.79)	-0.05081 (0.893)	-0.05285 (0.89)
Family size (HH)		**-0.28437** **(0)**	-0.09232 (0.065)	-0.04108 (0.628)	-0.04683 (0.583)
Number of sons (HH)		**0.247792** **(0.011)**	-0.082 (0.384)	-0.13987 (0.37)	-0.06146 (0.702)
Number of migrants		0.123033 (0.853)	0.000296 (1)	(dropped)	(dropped)
Number of females in HH (fem_hh)		**0.291185** **(0)**	**0.175369** **(00.001)**	**0.147802** **(0.113)**	**0.159322** **(0.088)**
Number of daughters-in-law in HH		0.109846 (0.568)	-0.07287 (0.635)	0.097903 (0.724)	0.013676 (0.961)
Number of grandchildren in HH		**0.2558** **(0.063)**	**0.179169** **(0.101)**	-0.03248 (0.866)	-0.00442 (0.982)
No formal education (HH)		0.020505 (0.811)	0.007421 (0.915)	-0.08252 (0.496)	-0.03261 (0.792)
High level of education (HH)		0.171701 (0.544)	-0.25671 (0.249)	-0.13674 (0.732)	-0.38316 (0.377)
Some HH contribution to migration costs			-0.045 (0.821)	-0.08151 (0.797)	-0.02719 (0.932)
High HH contribution to migration costs			**0.43044** **(0.016)**	**0.629326** **(0.09)**	**0.618405** **(0.094)**
Visit once every 2 years or more (migrant)			-0.12739 (0.299)	-0.21647 (0.315)	-0.29785 (0.176)
Visit once every 5 years or less (migrant)			**-0.67031** **(0.006)**	-0.34683 (0.407)	-0.28718 (0.496)
Son of HH head (migrant)			**1.022071** **(0)**	**0.852357** **(0.005)**	**0.744912** **(0.017)**
Brother of HH head (migrant)			**0.607438** **(0)**	**0.580992** **(0.05)**	**0.5449** **(0.066)**
Spouse of HH head			**2.186528**	**1.462337**	**1.553678**

(migrant)			**(0)**	**(0.009)**	**(0.006)**
Secondary relative of HH head (migrant)			0.005857 (0.974)	0.392261 (0.234)	0.286945 (0.391)
Log per capita income (HH)				**-0.2915** **(0.03)**	**-0.27882** **(0.041)**
Number of income earners (HH)				-0.18699 (0.457)	-0.17676 (0.481)
Log of size of land (HH)				-0.15684 (0.221)	-0.15918 (0.213)
Own livestock (HH)				0.529162 (0.179)	0.541777 (0.171)
No Amenities (HH)					0.008049 (0.982)
Own fan and TV (HH)					0.004253 (0.989)
Own all 3 amenities (fan, tv, fridge) (HH(					**0.880457** **(0.087)**
	N=220	N=220	N=220	N=96	N=96

We now move onto our second set of models, using the dependent variable Ai which ranges from one to five, depending on the importance of the remittances to the receiving household. In these sets of models, we only use those households and migrants that receive/send positive remittances. The results from these models are much more consistent, in that the significance and signs on the coefficients do not fluctuate as much in response to the addition of other variables (i.e. successive layers), and the behavior of coefficients is quite similar between the migrant and household levels. However, we must take into consideration right at the outset, one of the biggest shortcomings of this model. The variable Ai could be a reflection of the receiving household's lack of wealth or income, i.e. need, or a reflection of (the way we intend for it to be used) the amount of

remittances the migrant is sending. We assume, that for remittances to be important to a household, it cannot be an insignificant amount. From column 4 on, we do control for household income, thus at least beyond that point we can more forcefully assume that the results are estimating the relative amount of remittances to a household. We will look at the variable coefficients to discern what household and migrant characteristics lead to remittances in amounts significant enough to make a real impact on the household.

Due to the relatively greater consistency of the variables using this dependent variable, and restricting our data to remittance receiving and sending households and migrants, we can make our analysis more broadly than by going layer by layer.

Just as with Table 1, we controlled for the possible correlation between the pre-migration education level of migrants and the number of years abroad and the type of jobs they acquire. Again, we found no significant change in either coefficients or significance. Thus the level of education does not significantly correlate to the duration of stay or the type of job with respect to the importance of remittance to the household.

In both the migrant and household perspectives, family size has a negative impact on the importance of remittances, and it remains significant in all restricted and unrestricted equations at the migrant level. However at the household level the significance drops once household income and wealth are accounted for. The negative relationship between the importance of remittances and family size can be interpreted in a number of ways. It can be seen as a contradiction to altruism because migrants are not remitting more to households with more dependents. Or it could be that households with more dependents have a greater level of need, and the amount remitted is not enough to

be important, or even that a household with more members, have more earners and thus do not regard the remittances as being very important. To choose between these interpretations we can look at the coefficients on per capita income (logpercap_income) (which takes into account both the income of the household and the number of people in the household), number of income earners (HH_Inc) and number of female members in household (fem_hh). The coefficients on the log of per capita income and the number of income earners variables are both negative in both the migrant and household perspectives, although only the per capita income coefficient is statistically significant. This indicates that the higher a household's income is and the more income earners it has, the less important the remittances are. This is in keeping with the idea of altruism, such that the lower a household's per capita income is, and the less income earners it has, the more important (or larger) remittances it will receive. This finding can also be explained by a previously cited reasoning that higher income earning households are less likely to deem a certain level of remittances as important. Yet, this still does not deduct from the finding that lower income earning households are both more likely to receive remittances, and also in more (relatively) significant amounts. The coefficient on fem_hh is also positive and significant in all the layered regressions, and in both the migrant and household levels. Thus a household with more dependents is more likely to receive more important remittances, also in keeping with altruism. All of these findings lead us to believe that the negative coefficient on family size is not a contradiction to altruism.

The variable for the number of sons in a household is not significant in either the household or migrant levels. The coefficient on grandchild is positive and significant in both the migrant and household level perspectives, until we account for household

income, which as previously mentioned, has negative and significant coefficients. Thus we can guess that households with more grandchildren are likely to have less per capita income (due to more children, who are unlikely to be earners) and thus had a significantly positive impact on the importance of remittances when household per capita income was not included in the model. The positive coefficient on grandchild is also an indicator of altruism.

The variable indicating the family's high contribution in the costs of migration (high_contribute) is positive and significant in all of the nested regressions in both the migrant and household perspectives. This variable demonstrates the strength of the household's economic ties or economic support, and thus a positive coefficient is consistent with altruism. However, as we previously mentioned, this finding can also offer support to a investment repayment function of contract-driven remittances. The coefficient on bro_mig is also positive and significant in all of the nested regressions in both migrant and household levels. Thus it seems that while the regressions on R_i, the likelihood of receiving remittances, seemed to show that the brother migrant is unlikely to remit, yet when we restrict our sample to brother migrants who do remit, it seems that they remit in significant amounts. None of the other kinship indicators for migrants, son_mig, spouse_mig, secondary_mig, were significant though son_mig and spouse_mig is always positive, whereas secondary_mig is always negative at the migrant level, all of which is consistent with altruism and its predictions on remittances and the strength of family ties. At the household level, on the other hand, secondary_mig is always positive, however it is also always insignificant.

Ownership of all three types of amenities(all_amenities) is also always positive and significant in both migrant and household levels. Yet this does not correspond to the negative sign on the per capita income and number of income earners coefficients. Thus it may be possible to attribute the positive sign on all_amenities to reverse causality where the remittances are in fact leading to the ownership of all three amenities. There is basis for this explanation in regressions of the impact of remittances, and presence of migrants ownership of amenities (see Appendix C).

2.6 Conclusion

We have attempted to determine what motivates the remittances received by households in rural Bangladesh. We used two different dependent variables – the binary variable of the likelihood of receiving remittances (Ri), and the Importance of remittances received to the household (Ai) which has values ranging from one to five. We also used two sets of data, one of which uses the migrant level perspective, and one which looks at the household level perspective. Altogether we used four different models and nested regressions.

While the findings have been detailed in the analysis section, we would like to point out a few overall trends in our data.

Overall, migration characteristics proved quite insignificant in determining positive remittances, or the amount or importance of remittances. Most surprisingly, migrant education level coefficients were highly insignificant in all of our model estimations. This is sharply in contrast to the investment hypothesis put forth by Lucas and Stark(1985) for the family contract model. Only the square of the number of years

abroad was significant, and negative (with a very small coefficient), in determining whether migrant will send remittances at all. This implies a gradual decrease in the likelihood of sending remittances.

When we included household variables into our models we found that the coefficients on the variables for the log of per capita income, and high education levels for household members were consistently negative. This seems to suggest that households with higher income and levels of education receive fewer remittances. However, regressions of household wealth characteristics against the presence and number of migrants in a household, displayed significantly negative relationships, so that households with higher incomes are less likely to send migrants abroad. Yet even if we look at these same income and education variables in the A_i models, where we restricted our sample for only those households that have migrant relatives, we see that they are still negative. This may be a reflection of the fact that a higher educated and higher income earning household is less likely to depend heavily on remittances and thus think them very important (which is what the Ai variable measures).

Yet in both the Ri and Ai models, we cannot deny that for one reason or another, lower income households are more likely to receive remittances and also receive them in significant amounts. This discredits the possibility of migrants remitting in hopes of inheriting household wealth. We also see that the relationship between the reception of remittances and the number of females (i.e. dependents) in the household is positive, and that size of land owned by the household is insignificant to the estimation, both of which also provide support for the lack of self-interest driven motivations in our sample.

An evaluation of measures of family ties also shows a positive relationship between strong family ties (indicated by high contribution of the household in migration expenses, relationships of son and spouse between migrant and household head, etc.) and the likelihood and importance of remittances. Though, some of the relationship variables, such as those for migrants that are brothers of the household head, or secondary relatives, often demonstrated conflicting behavior between different models, an overall survey of the likelihood of sons and spouses remitting, or households with daughters-in-laws or grandchildren receiving remittances, indicate that stronger family ties lead to more likelihood of remitting. This outcome is predicted by both altruism and the family contract model. We also noticed that the coefficient on the variable for son of migrant, while always positive, is also frequently insignificant and small. In fact, oftentimes brother and secondary relatives showed more of a positive and significant relationship with the importance of remittances. This also goes against Lucas and Stark's investment component of the family contract hypothesis - that "own young" or household young (i.e. members who have been brought up by the household, and whose education is most likely to have been paid for by the household) will remit more than other migrant family members at high levels of education, as a way to repay the household for their investment.

While our findings do not clearly point to a specific motivation for remitting, they do indicate that households in Mirzapur do not make migration decisions within a family contract model that relies on remittances as repayment for household investments in the migrant's human capital, nor do migrants remit under the self-interest driven motivation of inheriting wealth. Both of these discredited hypotheses are components of the self-

interest driven family contract model. Since less wealthier households are more likely to send migrants and receive remittances in our sample, it is more likely that migration is a means of increasing income for the purpose of securing household welfare by struggling households, and remittances are driven by strong family ties. Both of these statements on the other hand, indicate altruism. However, we do not have enough evidence in our data to merit an altruism model either. We are not able to clearly show, for example, that remittances decrease with the amount of land owned, or the number of sons, as both variables were either insignificant, or unstable and contradictory between regressions.

A longitudinal study which maps the household's remittance reception in response to household income fluctuations, additional variables that indicate the migrant's intentions of settling or returning from the destination region, as well as information on the actual amounts of remittances received by the household, would better inform a conclusion on the motivations that drive remittances. For this study, we conclude that while we cannot provide sufficient evidence for a predominantly altruistic model in our sample, we have been able to provide limited evidence against the possibility that the remittances in Mirzapur serve as returns on household investment or are driven by inheritance-driven motivations.

In part 2, we have studied the reception of remittances by households in rural Bangladesh, and the determinants which impact whether a household will receive remittances, and how much remittances a household receives. Our dataset was composed of households on the receiving side of remittances. In the next part of this paper, we will turn our attention to studying the remittance-sending population. We have looked at migrant remitters in part 2 by using information on migrant relatives in our rural

household surveys, however, an overwhelming majority of these migrants are in the middle east, working as labor. Yet, aggregate migration and remittance data for Bangladesh, also indicates that a significant flow of migrants move to developed western countries, especially the United States (Siddiqui, 2004a,b) and remit in significant amounts back to Bangladesh. This group of migrants usually resides in the host country for a much longer term, and often become permanent residents, thus forming more of a stable and relatively well-off Bangladeshi diaspora when compared to the temporary labor migrant populations in places like the middle east and southeast asia.

Research on established diaspora populations from other countries like India, China and the Philippines, has shown that the besides providing private remittances, the diaspora can also provide other ket funding support and services that a temporary low-skilled migrant population cannot. Diasporas of other countries have been able to offer substantial amount of collective support (collective remittances) to support public development projects in their home countries, and well as offer various professional and political support. This is broadly termed as diaspora philanthropy, a relatively new area in research in the context of migration and remittances.

Thus in Part 3, we turn our attention to a small empirical study conducted to explore the potential of the Bangladeshi diaspora in the United States to contribute to progress and development in Bangladesh through philanthropy. Understandably, this is a departure from the topic of private household remittances that we have been looking at thus far, however, we include this portion primarily to introduce the reader to a newer area in remittance research and to encourage future research in this topic.

Section 3: Diaspora Philanthropy

3.1 Introduction

Thus far, this paper has focused on micro-level transactions made between labor migrants and the household. Labor remittances are of huge consequence to many receiving nations, for whom the large inflow remittances form a significant part of the nation's GDP, as well as the major source of important foreign exchange earnings. Thus it is important to understand the nature of remittances flowing into a country in order to enact effective policies to best utilize their positive impacts. This paper has focused mainly on understanding the motivation behind remittances flowing into rural Bangladesh, in order to contribute to the necessary and important discourse on how to design effective policies and money transaction operations, to fully harness the positive impact of remittances on receiving nations.

However, Bangladesh as well as many other remittance-receiving nations, such as China, India, Mexico and the Philippines, has a considerable diaspora. Yet, what is imparted by the term diaspora? The definition of diaspora is varied across social, political, economic and historical literature on migration and expatriate communities. Sociologist, Pnina Werbner (2005), emphasizes that diasporas are not just ethnic communities, in that, unlike ethnic communities, diasporas are more defined by civic engagement. Ethnic communities according to Werbner (2005) are more tied to a physical space, whereas members of the diaspora are more connected intellectually

through feelings of co-responsibility and tendency towards active engagement in the welfare of the community or country of origin.

While this offers an intriguing understanding of diaspora, as a collection of displaced people who are devoted to actively bettering their origin communities, in this study, we adopt a broader understanding of diaspora. We use a definition that is similar to the one used by Siddiqui (2004b) in her paper focused on the Bangladeshi diaspora in the United Kingdom and United States. We hold that a diaspora is a community of migrants that are settled (usually permanently) in host countries, and maintain a sense of identity, as well as different degrees of ties with the country of origin and with other members of the same diaspora (Siddiqui, 2004b).

It is commonly found that, compared to temporary labor migrants, expatriates who settle in destination regions are typically characterized by relatively higher skills, and higher-paying jobs (Siddiqui, 2004a).

In this last section, we will briefly bring attention to the field of diaspora philanthropy, a phenomenon that has considerable potential for impacting progress in developing nations. Diaspora philanthropy is popularly views as actions performed by members of the diaspora that promotes social, political, scientific, cultural and economic advancement in the country of origin, however, the term requires a bit more specification. Like diaspora, the term diaspora philanthropy has many variations; the differences between each are informative of their applications in different papers and discussions. In setting the definition for diaspora philanthropy, we will once more borrow from the definition of another work of diaspora literature, “Diaspora Philanthropy: Influences,

Initiatives" by Paula Doherty Johnson (2007). She states three fundamental elements comprise diaspora philanthropy:

"(1)charitable giving from individuals who reside outside their homeland, who (2) maintain a sense of identity with their home country, (3) give to causes or organizations in that country, and (4) give for public benefit."

While the concept of giving back to one's home country or community is by no means a new one and has been a component of the earliest waves of migration, diaspora philanthropy as a term is more recent. This is partially because migration has evolved immensely in the last few decades, as people's mobility increased incrementally, and people moved between nations at higher annual rates. With the increased movement of people, there are larger transnational communities created through the ties that still exist between migrants and their families in the origin country. A large expression of transnational ties is economic transfers made by the migrant back to the household. While these transfers also predate to much earlier migration, with the increased volume of migration, the bulk of transnational transfers is much more substantial. Furthermore, a considerable portion of these growing international transfers are used to benefit public rather than private causes, thus bringing more and more attention to the term diaspora philanthropy.

However, diaspora philanthropy is still a relatively newer area in migration literature. As such, there are many countries with large diasporas that have not yet invested in research to fully understand the specific dynamics and potential usefulness of its own expatriate community. In the existent literature much has been written about the

benefits a country would receive by harnessing the services and financial support the relatively well-off and well-established diaspora can offer.

Members of the diaspora have been instrumental in the transfer of capital, knowledge, and ideas to their regions or communities of origin. Migrants themselves are sources of various types of capital such as economic, social and human capital. Economic capital involves spending on origin country exports, and tourism, as well as financial contributions made to promote development projects. Their social capital lies in their ability to create social networks between members in the host country and the origin country, while human capital involves their often specialized knowledge and skills in their fields or profession, their knowledge on the financial, and political operations of their country of residence which could be valuable to burgeoning home country industries trying to establish themselves in the host region. Due to this, diaspora philanthropy is not exclusively made up of transfers of economic resources, such as collective remittances by members of the diaspora to support certain causes back home. An important aspect of diaspora philanthropy, that is gaining more and more attention, is the exchange of skills and ideas. For example, members of the large Chinese diaspora have been instrumental in integrating Chinese businesses and trade initiatives into the international community by helping Chinese companies apply rules of international organizations (Dunn, 2004). Similarly, the Indian diaspora in the UK and USA has successfully lobbied the governments of those nations to support issues that promote India's interests (Siddiqui, 2004b). Peggy Levitt, the…., reports that members of the Pakistani diaspora in Boston give out $5000 grants to a person who comes with the best business plan for a business

intiative either in Pakistan or the US, or involving both. They also offer advice to the Pakistani government on labor and education policies (see Dunn, 2004).

Thus it can be seen that besides mobilizing economic resources for development funds, members of the diaspora can also organize and contribute to the origin country by offering advocacy services, transferring skills and specialized knowledge to promote development, lobby national and international governments to address important civic and development issues, engage in cultural exchange, promoting awareness about country of origin in host community, creating demand for origin (UN-NGLS, 2007).

Bangladesh, despite having a large expatriate community, and being the recipient of a large amount of remittance inflow, does not enjoy most of the non-remittance benefits of diaspora communities. This has been attributed to the lack of research and available data on how to effectively engage the diaspora and allow for collaboration and meaningful contribution (Ionescu, 2006). Yet Bangladesh stands to gain a lot from greater diaspora involvement in the nation's welfare, through services such as consultation with developing credible investment mechanisms in order to increase overseas capital flow into Bangladesh, skills transfers from numerous Bangladeshi non-resident highly-skilled professionals, advocating effective and positive economic reform in Bangladesh, as well as lobbying international governments to offer more favorable economic (trade) policies towards Bangladesh. For example, Bangladeshi ready-made garments exports into the United States faces a hefty 15.3% tariff rate, while the same type of exports enter almost tariff free from countries in Africa. Moreover, tariffs for other developed countries like UK, Canada and France are below one percent. Much of the difference in tariff rates is due to the presence (or absence) of powerful lobbying

groups that pressure host country governments, such as that of the US, for trade policies that are favorable to the home economy.

Like Bangladesh, many other financially constrained nations hesitate to spend resources to cultivate homeland investment by the diaspora because they are unsure about the potential and willingness of their respective diasporas to invest. However other countries, like India, Afghanistan and Dominican Republic, recognize the potential of their diasporas to boost social and economic advancement, and thus invest substantial resources to develop government agencies and enact policies to foster diaspora interest in investing in the homeland (Johnson, 2007). Jonhson states that:

"Diaspora philanthropy may represent an underappreciated but emerging opportunity to convert private wealth to philanthropic capital and to use it effectively to address some of the world's most pressing challenges."

In this last part of our study, we would like to detail the results of a small online survey we conducted on members of the Bangladeshi diaspora in the United States, in order to determine the potential of the Bangladeshi diaspora to engage in philanthropy related to Bangladesh.

Nielsen and Riddle (2007) posit that an individual's likelihood of becoming involved in philanthropic activities in his home country is dependent on his social embeddedness, among some other factors. Social embeddedness, as described in their paper, is a sociological measure of the strength of the social ties an individual has with his community back home. The survey conducted in this study includes questions on the

respondent's frequency of visits to Bangladesh, and tendency to send gifts as a measure of their social embeddedness.

We also included questions on different types of philanthropy efforts, ranging from collective remittances, to skills transfer and advocacy, to determine what types of efforts the US-Bangladeshi diaspora is most interested in.

The objective of this survey was to get a brief profile of the Bangladeshi diaspora and their ties to Bangladesh, as well as to probe what issues in development the Bangladeshi expatriates are most interested in and willing to support through funds, what kinds of philanthropy efforts they are already involved in, and what type of obstacles they face in trying to offer economic support to Bangladesh.

3.2 Survey Data

A profile of the Bangladeshi Diaspora in the United States: Description and Analysis

The survey was conducted online between the months of January to April of 2010. It was distributed to several Bangladeshis, through the database of the Embassy of Bangladesh in DC, as well as through request to several Bangladeshi cultural and philanthropy organizations. We have a total of 141 respondents. In the next two sections we will summarize the findings of the survey and briefly discuss its implications.

Descriptive Statistics

MIGRANT DEMOGRAPHICS			
Where are you from? (Top 2)	1. Dhaka (46.4%) 2. Chittagong(12.5%)		
Age	Mean: 48.55	Max: 73	Min: 28
Sex	Male: 91.1% Female: 8.9%		
Religion:	Islam: 80.36% Hinduism: 3.57 Other: 14.29		
Education : - Some College/Associate Degree - Bachelors (B.A., B.S.)/College Undergraduate completed - Masters/Post-Graduate (e.g. M.A.) - Post-Doctorate/Higher Degree (PhD, MD, JD, EdD, etc.)	 1.75% 14.0% 59.7% 24.6%		
Reason for moving to USA:			
- To pursue further education - To stay with family and friends - To stay with spouse who lives in USA - To seek work opportunity - To accept a job already offered to you - Migration lottery - Other	51.5% 6.1% 4.6% 22.7% 3.0% 1.5% 10.6%		
Number of Years in USA:	Mean: 22.18 yrs	Max: 42yrs	Min: 3yrs
State of Residence in USA (Top 3)	1. California (28.1%) 2. Virginia (21.1%) 3. Maryland (15.8%)		
Occupation Type of Employer (top 5): - Private Sector - Public Sector - Self-employed - National Government - State Government	 43.9% 10.5% 10.5% 8.8% 5.3%		
Occupation Type (top 5): - Computer and Mathematical Science - Other - Architecture and Engineering - Business and Financial Operations	 17.5% 17.5% 15.8% 14.0% 10.5%		

- Science (Life, Physical, Social, etc.)			
HOUSEHOLD INFORMATION			
Household size in USA	Mean: 2.96	Max: 8	Min:0
How many family members live in the USA? None Less than 5 members 5 – 10 members 10 – 20 members More than 20 members	 3.5% 22.81% 21.05% 28.1% 24.6%		
How many of these family members moved to USA after you settled here?	Mean:6.38	Max: 35	Min:0
How many of your family members still live in Bangladesh? - None - Less than 5 - 5 – 10 members - 10 – 20 members - More than 20 members	 5.3% 19.3% 17.5% 7.0% 50.9%		
FAMILY TIES			
- Frequency of visits to Bangladesh: Once a year or more - 1/year to 1/5 years - 1/6years to 1/10 - Less than 1/10 years	 28.1% 59.6% 7.0% 5.3%		
Frequency of visits from Bangladesh: - Once a year or more - 1/year to 1/5 years - 1/6years to 1/10 - Less than 1/10 years	 26.3% 49.1% 7.0% 15.8%		
Do you send remittances?	Yes (93%) No (7%)		
Frequency of sending remittances: - More than once a year - Once a year - Once every 2 years - Once every 5 years	 58.5% 24.5% 7% 7%		

3.2.1 Diaspora Demographics

From the data shown above, it can be seen that most of our sample is middle-aged muslim males. It should also be noted that the sample of respondents are highly-educated

professionals. Almost all of the respondents have a Bachelors degree or higher (except for only 1.5%) and the bulk of the respondents have a masters degree or higher. They also mostly work in private sector jobs in computer and mathematical science, architecture and engineering and business and financial operations.

It is also interesting that most respondents cite that they moved to the United States to pursue further education (51.5%) while a significant number of respondents (22.7%) cite economic reasons. This outcome is in fact in keeping with the migrant statistics that describes the second wave of Bangladeshi migration to the US that took place during the 1960s and was composed of mainly of professionals and students looking to pursue further education (Siddiqui, 2004b). This migrant demographic is clearly different from the more recent Bangladeshi inflows into USA, which has a greater proportion of low-skilled workers. Similarly, in keeping with the high level of education and professional occupations, our sample also reflects a largely settled Bangladeshi immigrant population, most of whom have been here for more than 20 years.

Given, the above sample characteristics, it should be noted that this sample is not a reflection of the entire Bangladeshi migrant population in the United States. Especially with the more recent increase in the influx of low-skilled immigrants, in non-specialized employment sectors, a more inclusive sample would have more representation in lower education and less skill-intensive professions. This bias was mostly likely caused by our use of embassy contacts, and media and philanthropy organizations as both of these are likely to select for professional, well-established diaspora members. However, in the context of this study, this bias might be helpful in focusing attention on a group of people

who are well equipped in terms of skills, networks, as well as resources to offer the diaspora services we discussed earlier.

3.2.2 Household Information:

Respondents have an average of 2.96 person households (excluding respondent) with a maximum of 8 person household. This average household size is slightly larger than the average household size in USA, 2.59. Also, most respondents have more than five family members living in USA, with almost a quarter of respondents with more than 20 members. Interestingly, respondents reported an average of 6.38 family members moved to the United States after the migrant, thus we can assume that our sample represents a group of relatively early migrants. This question was also

and willing to invest their human, economic and/or social resources for the betterment of Bangladesh.

In response to how aware participants are about current issues in the social, cultural, economic, health, and political issues n Bangladesh, we found that almost everyone cited at least some level of awareness on each of the aspects. Only two people claimed to not be at all aware of health issues. In fact, health was commonly cited as the aspect of Bangladesh respondents were not very or quite aware of. Social and cultural aspects were most commonly cited as what respondents were very well aware of. However, economic awareness is also quite impressive, as 54% claimed to be very well aware of economic issues. Moreover, if we also include being at least quite well aware, then awareness about the economy (95%) actually surpasses cultural awareness. included to see whether members of the diaspora play any role in encouraging further emigration from his/her

household in the country of origin. While more than half of the respondents claimed to having five relatives move to USA after them, almost 20% claimed to have zero family members following them. Also, while the response to this question can serve as an indicator, there is no way to know whether it is an accurate one, for time difference in migration does not imply causation.

We looked at frequency of visits by the migrant to Bangladesh, and visits from relatives from Bangladesh as a measure of family ties and found that frequency of visits both to and from Bangladesh is quite high. Very few respondents visit less than once every ten years, while most visit more than once every five years, and more than a quarter of respondents visit once a year or more. Surprisingly, a similar trend exists in visits from Bangladesh. This is very different from our findings from households in rural Bangladesh, where family members almost never visit migrant relatives abroad. That most of our respondents get visits from Bangladesh once every five years or more indicates that the immigrants in our sample come from households that are much more lucrative and have greater capacity for mobility than the typical low income labor migrant-sending households in Bangladesh.

3.2.3 Ties with Bangladesh

For this part of the survey, we attempted to determine social embeddedness of members of the diaspora, by asking questions that explore their level of awareness about different aspects of Bangladesh, their desire to eventually settle in Bangladesh, their emotional connection with Bangladesh, as well as their tangible economic connections with their families in Bangladesh. Through these questions, we

hope to get a picture of how much (or little) members of the US-Bangladeshi diaspora are still emotionally and economically invested tied to Bangladesh. Altogether, these variables that measure social embeddedness, will serve as one type of indicator of whether the US-diaspora would be interested

Also, more than half than half of the sample claimed that Bangladesh played a very big part in their life, while 40.3% claimed it was fairly important, and only s 3.5% of respondent claimed it was not very important. Though there was a "not at all important" option, none of the respondents chose it. While the nature of the question is quite vague and arbitrary we hold that it still has some value as an indicator of the emotional value Bangladesh has in the lives of the respondents. In a separate question asking whether they plan to eventually settle in Bangladesh, we see that the "yes" and "no" responses are quite close, 21.1% and 22.8% respectively, with the "No" responses being slightly more numerous. Though a significant proportion of respondents to plan to eventually return and settle in Bangladesh, the majority of respondents are either uncommitted or will not resettle in Bangladesh. Thus we can reasonably conclude that most of the people in our sample are not, at least by plan or intention, temporary migrants.

Finally, we also find that an overwhelming majority of participants are remitters (93%). Of them, 58.5% send money back to their relatives more that once a year, while 24.5 send back once a year, so that at least 83% of our sample remits once or more during the year. An equal proportion of 7% of respondents cite remitting once every two years, while another 7% cite remitting once every five years. Thus, perhaps, even more clearly than emotional investment or ties, most of our sample is clearly still economically tied to Bangladesh.

3.2.4 Philanthropy

We asked a set of questions which probed the respondent's level of involvement in Bangladesh, their views on what issues require the most attention in Bangladesh, what they're willing to commit to, what they've contributed to thus far, the reasons for their involvement, what channels they used to contribute, what obstacles they face in contributing to Bangladesh, and finally what improvements they desire in the philanthropy efforts towards Bangladesh. We hope that the responses to these questions will help us gauge how practically involved the US-Bangladeshi diaspora is currently is, and is further willing to be, and what improvements would be most effective in further engaging them.

We found that 12.1% of the respondents are not involved in any form of groups or associations that are tied to their identity as Bangladeshis. A larger proportion (27.5%) however, is involved in professional associations such as those for Bangladeshi doctors, dentists, engineers, lawyers, IT specialists, etc. Some (23.1%) are involved in US-based Philanthropic/Charity/Advocacy Organization that donates money/support to Bangladesh, while some (20.9%) are involved in similar groups that are actually organized and operated by members of the Bangladeshi diaspora. We asked if any or all of the groups they were involved in participated in either economic or skills transfers to Bangladesh in the past year. Interestingly, the organizations that are US-based and led by non-Bangladeshis were more cited to have contributed than groups that are run by

Bangladeshis. However, this could be a reflection of the fact that more of our respondents are members of the former rather than the latter.

In response to a question on what kinds of initiatives respondents are more likely to get involved in over the next few years, a large majority of cited that they are most likely to give money to development/charity/relief projects. The next most common choice was the willingness to help set up ties and encourage networking between organizations in Bangladesh and USA. This was followed by the option of raising money for a charity/development issue by forming a group with other Bangladeshis. Notably, very few respondents opted to actually design development or charity projects for Bangladesh, and then raise funds for it, while the least chosen option was the option to actively advocate for better policies between US government & US businesses and Bangladesh. This is an interesting finding, especially as advocacy and lobbying services are a prominent and desirable diaspora service discussed earlier in this section as one that would especially benefit Bangladesh in light of US-Bangladesh trade and tariff policies. From the responses, it seems that the respondents are reluctant to commit to efforts that require a lot of active involvement and would prefer instead to offer support to established projects. This could be a very meaningful finding for the Bangladeshi government, and all other business and non-profit branches interested in soliciting diaspora support and investments.

We also asked respondent to rank what they felt are the five highest priority issues/areas of concern in Bangladesh that need to be improved over the next five years. Among their responses, accessibility and quality of education ranked highest, interestingly infrastructure and construction (e.g. roads, bridges, buildings, etc.) ranked of

second-highest importance, followed by health and research related issues in third, institutional and bureaucratic reform (e.g. reform of political, educational, public sector systems) as fourth, and food and hunger issues as fifth. The welfare of farmers and rural industries was also an important issue, followed by issues of gender-rights and social inequalities. Political causes (funding political campaigns, political party and election costs, etc.), and religious causes (building of mosques, funding religious education,etc.) were listed as least important.

Dunn (2004) discusses the impact Mexican Hometown Associations (HTAs) in the USA have on campaign funding and elections in Mexico in return for extension of many political rights given to non-resident Mexicans. Based on these results, it is unlikely that the Bangladeshi diaspora has similar political interests, or is as likely to be lured into making an investment through the extension of citizenship rights such as voting rights and dual citizenship. Furthermore, the respondent's interest in institutional reform is evident in their responses to questions regarding the factors that motivate and the factors that prevent them from contributing to development in Bangladesh (discussed later). It is also interesting that in response to the previous question, the need for institutional reform is deemed to be much more urgent than the issues of food and hunger.

In a separate question that asks them what issues, they have thus far been involved in, we see that education is again at the top of the list, however, other issues, such as infrastructure building, that had been cited as urgent, has not been invested in,

while issues such as orphan and child care, which were not as highly ranked receive more funds. This is most likely due to the lack of avenues available to members of the diaspora to invest in infrastructure, whereas funds to support orphans and education are more prevalent. By looking at what the diaspora deems as most relevant and urgent,the Bangladeshi government can more effectively target and seek financial and professional support for its development projects.

It is also interesting that most respondents made their donations indirectly through family and friends living in Bangladesh, while a significant amount also donated to US-based Bangladeshi organizations. The tendency of migrants to use a part of their remittances to support causes for the public good has been an interesting issue in diaspora philanthropy literature (see Johsnon, 2007; Siddiqui, 2004b). It also has interesting implications for governments and organizations regarding what channels most of the diaspora aid is most likely to flow through and how to make this more efficient.

In response to what factors best explain their reason for contributing to Bangladesh, most respondents cited reasons that indicate that their primary motivation is the betterment of Bangladesh, rather than any social or economic returns gained from these investments. However, interestingly, the primary motivation for contributing couples the betterment of Bangladesh with the need to overcome the ineffectiveness of the government bureaucracy. For example, the most important reason for making contributions was the desire to do positive work in Bangladesh without involving the government bureaucracy. This has very interesting implications for what avenues of

philanthropy are most likely to attract diaspora support, as it seems non-governmental projects would be more attractive than government-led projects. The second most important reason was simply the desire to contribute to social, economic and financial development of Bangladesh. Other motivations that were also cited are: Due to involvement in an organization/group that makes contributions to Bangladesh, due to being asked by another person of Bangladeshi-origin to contribute, trust in the organization/group they are making their contribution through and also, guilt over the difficult conditions in Bangladesh. These responses also indicate that active soliciting by groups who are also trustworthy could be effective in attracting support. The least cited reasons were the more self-interest driven motives – the opportunity to network with other members of the Bangladeshi diaspora (e.g. through professional, cultural, philanthropy organizations) and the possibility of recognition by the Bangladeshi community either in Bangladesh or USA for their contributions. However, it should be considered how likely one is to confess to such motives as one of their primary reasons for contributing to their homeland.

The final two questions of the survey focus on the obstacles that prevent immigrants from contributing, and what some possible improvements would be. Answers to both of these questions seem to indicate a strong sense of distrust among the diaspora in development and charity projects in Bangladesh.

The most important problem diaspora members face regarding making contributions to Bangladesh is a lack of trust in the government and general skepticism

about whether there is scope for development in the current political environment. This is followed by lack of trust in how their money and/or professional support will be utilized, and lack of trust in the efficiency of Bangladeshi-based non-profit and private organizations working on the projects. Some less frequently cited obstacles are lack of information on which projects need spending, and where and how to fund these projects, and also, lack of dispensable income on the part of the respondent. The lease cited problems are lack of interest from members of their household and most interestingly, a lack of available Bangladeshi networks and organizations in their local area that work on charity/relief/advocacy projects in Bangladesh. It seems that the problems is not that there are not enough available venues for engagement in philanthropy, but rather that members of the diaspora are generally skeptical and distrustful about the effectiveness of them, and also in general of the system of how money is handled in Bangladesh.

Similarly, the most highly desired improvement that would make contributing to Bangladesh more easy and attractive was overwhelmingly the desire for transparency and feedback from the organizations about how their money was utilized. This is followed by a suggestion that would allow diaspora members to also gain an economic return on their investments – e.g. diaspora bonds. Another highly ranked desired improvement is the desire for more active involvement by the Bangladeshi government in your local communities in the USA to inform non-resident Bangladeshis of what needs to be done in Bangladesh. The least cited desired changes are more relaxed immigration policies between the US and Bangladesh and, help from Bangladeshi government agencies with job-solicitation and settlement after Bangladeshis move to the USA. Regarding the last option, since most respondents have been long-term immigrants with secure jobs, it is

unlikely that immigration policies, and help with employment solicitation would be as important a factor for them as it would be for more recent and temporary migrants.

2.3 Conclusion

We have a sample of highly educated, professional Bangladeshi immigrants, most of whom have been here for more than 20years. One of the goals of this survey was to determine the level of social embeddedness of the US- Bangladeshi diaspora. To this end, we found that most people visit Bangladesh at least once every five years, a large majority of the sample remit at least once a year, and most respondents are also involved in some organization that is tied to their identity as Bangladeshis. Though most respondents do not have committed plans to resettle in Bangladesh, most consider Bangladesh as playing a large role in their life. Most respondents also reported to making a contribution towards Bangladesh. It is significant, however, that most also cited making their contributions through family and friends in Bangladesh.

Through this survey we also hoped to get information regarding what kinds of projects the members of the diaspora are most interested in supporting, what obstacles they face, and what improvements they desire in philanthropy efforts. .It was apparent that respondents are more willing to engage in initiatives that have already been

established rather than design and propose development projects themselves. We found that respondents are mostly interested in education and health issues, however, institutional reform was also a common priority for most, as was infrastructure building. While many expressed interest in infrastructure building, a very small number ever contributed to it. We hold that this is due to the lack of available avenues to contribute to infrastructure building. It is intuitive that the types of opportunities abvailable to the diaspora limit what they engage in, despite their interests. Thus it is important to equip the diaspora with the ability to contribute to what they feel strongly about, and thus organizations and the government must make serious efforts to determine what development issues are most important to the diaspora.

We also found that most of our respondents shared a distrust of the bureaucratic system in Bangladesh, and the scope for their money to have any impact. They are also very skeptical of the trustworthiness and efficiency of organizations that take donations for development projects in Bangladesh.

From this it can be concluded that members of the diaspora are still emotionally and economically tied to Bangladesh. They are also interested in being involved in the betterment of Bangladesh but have a general lack of trust in the organizations working in Bangladesh as well as a lack of trust towards the Bangladeshi government, and prefer to donate thorough family and friends. Therefore, in order to engage a diaspora of this nature, it is extremely necessary for development projects to have greater transparency. We also suggest that greater efforts be made to try to engage families of migrants that live in Bangladesh, as it seems that private remittances are still the primary channel for

donating. Greater efforts should also be made to devise ways to integrate philanthropy initiatives into the remitting process, such as by having options to donate to public projects at money transfer booths.

However the diaspora is not a homogenous entity, thus the results from this survey are not comprehensive as the sample represents a very small sector of the diaspora.

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Appendix

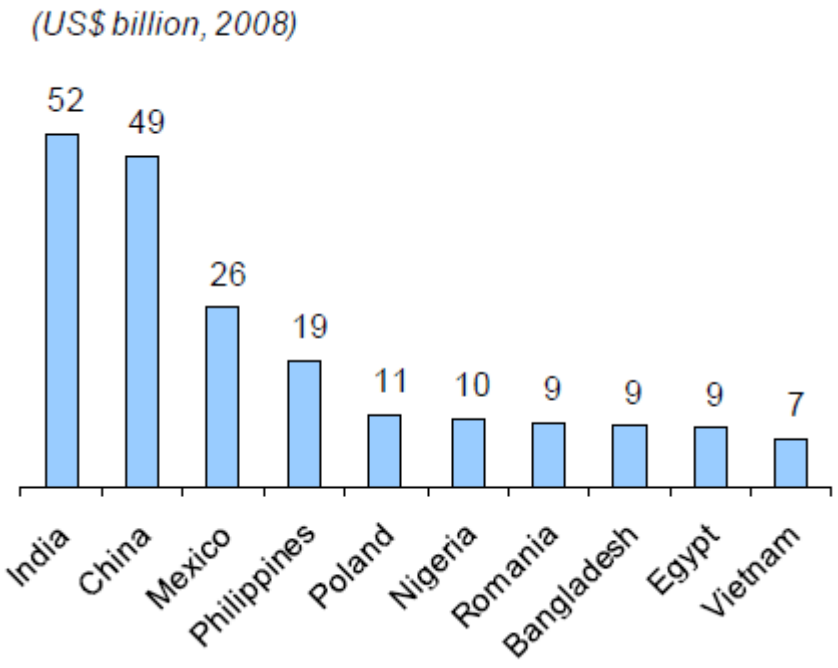
APPENDIX A: Predictions for the Effects of Explanatory Variables on the Receipt of Remittances

Explanatory variables	Altruism model	Self-interest model
Migrant's characteristics		
Income	+	+
Education	No prediction	+
Time since arrival	-	0
Recipient's characteristics		
Long-run income	-	±
Adverse short-run income shocks	+	+
Wealth (land, cattle, real estate, etc.)	-	+
Family ties between migrant and household	+	+

(a) The predicted signs are primarily based on the review of Docquier and Rapoport (2005), who make a finer distinction in models. In our table the insurance, investment and strategic inheritance motives are summed up under the heading self-interest model. NB: the predicted effects refer to level effects, although most of these effects carry over to probability effects.

APPENDIX B: Remittances to Bangladesh

Top recipients of migrant remittances among developing countries in 2008



Source: World Bank (Ratha, 2009)

Destination of Bangladeshi migrants

Year-wise and Country-wise remittance flow of wage earners to Bangladesh from Jan 1997 to Nov 2002

Year	1997		1998		1999		2000		2001		2002 (Jan-Nov.)		Total	
Country	US. $ Million	Core Taka	US. $ Million	Core Taka	US. $ Million	Core Taka	US. $ Million	Core Taka	US. $ Million	Core Taka	US. $ Million	Core Taka	US$ Million	Core Taka
S. Arabia	521.71	2285.63	626.08	2941.32	791.93	3919.96	932.98	4869.7	978.59	5476.75	1158.83	6711.76	5010.12	26205
UAE	91.79	404.74	116.28	546.26	124.53	608.66	143.15	746.34	186.93	1046.17	247.02	1430.7	909.7	4782.8
Qatar	57.52	252.99	60.25	283.05	64.5	315.26	61.24	319.41	76.67	429.09	93.55	541.83	413.73	2141.6
Oman	52.05	229.51	88.84	417.37	94.1	460.8	87.13	454.36	90.6	507.05	99.95	578.89	512.67	2647.9
Bahrain	2.81	12.39	33.22	156.07	41.08	200.54	42.79	223.15	49.24	275.56	53.08	307.43	222.22	1175.1
Kuwait	207.96	916.97	219.22	1029.9	242.45	1187.45	246.47	1286.57	254.75	1425.73	293.39	1699.27	1464.24	7545.6
Libya	188.93	833.08	0.25	1.17	0.04	0.19	0.1	0.52		0	0.09	0.52	189.41	835.4
Iran	31.66	139.6	0.39	1.83	0.39	1.95				0	0.03	0.17	32.47	143.5
US	207.65	915.62	217.09	1019.89	229.64	1122.72	248.21	1294.05	264.95	1482.81	392.12	2271.1	1559.66	8106.1
UK	59.43	262.05	62.95	295.74	54.85	268.56	68.87	358.79	63.93	357.79	151.43	877.06	461.46	2419.9
Germany	6.11	26.94	4.05	19.03	4.84	23.81	3.94	20.63	4.83	27.03	7.35	45.57	31.12	160.0
Japan	0.98	4.32	29.98	140.85	45.16	220.11	16.09	83.6	11.6	64.92	14.19	82.19	118	595.9
Malaysia	22.47	99.08	71.28	334.87	57.22	279.76	45.56	236.84	31.85	178.25	46.99	272.16	275.37	1400.9
S.pore	66.45	293.01	12.16	57.13	11.28	55.11	10.53	54.73	8.15	45.61	23.48	135.99	132.05	641.5
Australia											0.65	3.76	0.65	3.7
Italy											3.8	22.01	3.8	22.0
S.Korea											1.05	6.08	1.05	6.0
Hong Kong											2.04	11.82	2.04	11.8
Canada												0	0	
Switzerland												0	0	
Others	7.51	33.22	57.2	268.73	44.62	217.86	47.89	250.43	46.61	260.86	28.88	167.27	232.71	1198.3
Total	1525.03	6709.15	1599.24	7513.23	1806.63	8882.74	1954.95	10199.12	2068.7	11577.64	2617.92	15165.6	11572.5	60044

Source: BMET, 2003

Distribution of Annual Labour Outflows of Bangladeshi Workers for Overseas Temporary-Contract Employment by Country of Destination (%)

Year	K.S.A	Kuwait	U.A.E	Qatar	Bahrain	Oman	Malaysia	Korea(S)	S.Pore	Others	Total
1976-80	17.65	10.72	29.62	10.63	4.72	11.91	0.02	0.00	0.37	4.69	92207
1981-85	35.64	13.45	12.49	8.71	4.08	17.40	0.00	0.00	1.2	1.69	271442
1986-90	47.79	11.66	14.49	8.73	4.29	8.65	0.52	0.00	0.20	0.73	398295
1991-95	47.95	13.22	7.07	1.13	2.31	10.16	15.91	0.53	0.714	0.16	947507
1996	35.10	10.16	11.49	0.05	1.81	4.19	32.16	1.33	2.56	0.18	207193
1997	46.50	9.22	23.88	0.82	2.19	2.61	1.24	0.39	11.96	0.35	229113
1998	59.65	9.56	14.58	2.56	2.64	1.80	0.21	0.22	8.17	0.16	266083
1999	69.35	8.36	12.08	2.10	1.73	1.51	0.00	0.56	3.58	0.08	267823
2000	65.44	0.27	15.40	0.65	2.10	2.38	7.80	0.45	5.02	0.04	220995
2001	73.89	2.88	8.75	0.12	2.35	2.46	2.65	0.84	5.18	0.64	185735
2002	73.19	7.07	11.41	0.25	2.43	1.73	0.04	0.01	3.07	0.09	223074
2003	64.69	10.66	14.90	0.04	2.99	1.61	0.01	1.50	2.12	0.34	250610
2004	54.85	16.22	18.55	0.50	3.63	1.75	0.09	0.08	2.74	1.35	253465
2005	35.59	20.81	27.42	0.94	4.74	2.14	1.29	0.10	4.27	2.28	225994
2006	30.95	10.11	36.79	2.18	4.64	2.29	5.83	0.28	5.72	1.18	351079
2007	24.51	0.51	27.19	1.82	1.97	2.10	32.81	0.0	4.60	0.12	832609
2008	15.00	0.00	48.00	3.00	2.00	6.00	15.00	0.00	6.00	4.00	875655
Total	2558463	479561	1329135	144051	162755	318820	686334	19940	240016	101533	6265909

Source: extracted from Siddiqui, 2006, Source: *Bureau of Manpower, Employment and Training* (*BMET*), 2003.

APPENDIX C: IMPACT OF MIGRATION ON HOUSEHOLD WEALTH

AMENITIES AND PRESENCE OF MIGRANTS						
own_am~s dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
migrant* .1182582	0.046975	2.54	**0.011**	0.59854	0.02619	0.210327
logper~e .1012681	0.030374	3.32	0.001	6.98693	0.041736	0.160801
famsize .0431877	0.014519	2.96	0.003	4.6764	0.014732	0.071644
HH_Inc -.0715405	0.044696	-1.6	0.11	1.28954	-0.15914	0.016062

AMENITIES AND NUMBER OF MIGRANTS							
own_am~s	dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
num_migrants	0.070218	0.026543	2.64	**0.008**	0.861314	0.018195	0.12224
logper~e	0.101475	0.030461	3.31	0.001	6.98693	0.041772	0.161178
famsize	0.043321	0.014596	2.95	0.003	4.6764	0.014714	0.071928
HH_Inc	-0.06694	0.044891	-1.49	0.136	1.28954	-0.15492	0.021047

LIVESTOCK AND PRESENCE OF MIGRANTS						
own_li~k dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
migrant* .1083198	0.047162	2.32	**0.021**	0.59854	0.015885	0.200755
logper~e -.0663047	0.031292	-2.11	0.035	6.98693	-0.12764	-0.00497
famsize .0565506	0.016067	3.47	0.001	4.6764	0.02506	0.088042
HH_Inc -.0050843	0.046498	-0.11	0.913	1.28954	-0.09622	0.086049

LIVESTOCK AND NUMBER OF MIGRANTS							
own_li~k	dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
num_migrants	0.029559	0.025475	1.16	0.246	0.861314	-0.02037	0.079489
logper~e	-0.066	0.031215	-2.11	0.035	6.98693	-0.12718	-0.00482
famsize	0.057904	0.016054	3.55	0	4.6764	0.026439	0.089369
HH_Inc	-0.00551	0.046484	-0.12	0.906	1.28954	-0.09661	0.085601

LAND OWNERSHIP						

AND MIGRANT						
ownla~19 dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
migrant* .1722986	0.050434	3.36	**0.001**	0.6	0.073449	0.271148
logper~e -.0209205	0.033609	-0.62	0.534	6.98756	-0.08679	0.044952
famsize .0592044	0.016639	3.56	0	4.67317	0.026593	0.091815
HH_Inc -.0534037	0.050393	-1.06	0.289	1.29024	-0.15217	0.045364

LAND OWNERSHIP AND NUMBER OF MIGRANTS							
ownla~19	dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
num_migrants	0.079691	0.028593	2.79	**0.005**	0.863415	0.02365	0.135732
logper~e	-0.02268	0.033586	-0.68	0.499	6.98756	-0.08851	0.043142
famsize	0.059347	0.016666	3.56	0	4.67317	0.026683	0.092011
HH_Inc	-0.04807	0.050517	-0.95	0.341	1.29024	-0.14708	0.05094

SIZE OF LAND AND NUMBER OF MIGRANTS						
log_lands~19	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
num_migra	-0.1186	0.08274	-1.43	0.153	-0.28176	0.044556
logpercap_~e	0.042628	0.08075	0.53	0.598	-0.11661	0.201864
famsize	0.197324	0.035367	5.58	0	0.127581	0.267066
HH_Inc	-0.33208	0.136008	-2.44	0.015	-0.60028	-0.06388
_cons	3.372871	0.60372	5.59	0	2.182361	4.563381

SIZE OF LAND AND PRESENCE OF MIGRANTS						
log_lands~19	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
migrant	-0.24722	0.1564	-1.58	0.116	-0.55564	0.061189
logpercap_~e	0.041213	0.080689	0.51	0.61	-0.1179	0.200327
famsize	0.194158	0.0351	5.53	0	0.124943	0.263374
HH_Inc	-0.31835	0.135001	-2.36	0.019	-0.58457	-0.05214

_cons	3.432489	0.608601	5.64	0	2.232354	4.632624

APPENDIX D:Effect of household wealth on Migration

HOUSEHOLD LEVEL: PRESENCE OF MIGRANTS AND HH WEALTH							
Migrant	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
log_l~19	-.0409718	0.030081	-1.36	0.174	4.11781	-0.09993	0.017986
own_li~k*	.0187188	0.08447	0.22	0.823	0.808824	-0.14684	0.184276
logper~e	-.0441666	0.036465	-1.21	0.226	6.91383	-0.11564	0.027304
own_am~s*	.0998113	0.084147	1.22	0.223	0.784314	-0.06511	0.264736

HOUSEHOLD LEVEL: NUMBER OF MIGRANTS AND HH WEALTH						
num_migra	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
log_lands~19	-0.05528	0.057248	-0.97	0.335	-0.16817	0.057615
own_livest~k	0.010524	0.159095	0.07	0.947	-0.30321	0.324253
logpercap_~e	-0.09981	0.067266	-1.48	**0.139**	-0.23246	0.032835
own_amenit~s	0.253588	0.152944	1.66	**0.099**	-0.04801	0.555186
_cons	1.715186	0.558391	3.07	0.002	0.614063	2.816309

Appendix E Migrant and education of Household

PRESENCE OF MIGRANTS AND HOUSEHOLD EDUCATION & WEALTH							
migran~d	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
edu_high	-0.02437	0.051879	-0.47	0.638	0.231343	-0.12605	0.07731
edu_non	0.031887	0.025555	1.25	0.213	1.08955	-0.0182	0.081974
edu_lit	0.022818	0.026588	0.86	0.391	1.58209	-0.02929	0.074929
logper~e	-0.0082	0.03039	-0.27	0.787	6.88107	-0.06777	0.051363
log_l~19	-0.02369	0.02555	-0.93	0.354	4.11493	-0.07376	0.026391
HH_Inc	-0.0454	0.047359	-0.96	0.338	1.28358	-0.13823	0.047419
				Number of obs = 268			
obs. P	0.768657			LR chi2(6) = 5.07			
pred. P	0.772277	(at x-bar)		Prob > chi2 = 0.5351			

PRESENCE OF MIGRANTS AND HOUSEHOLD EDUCATION & WEALTH at HOUSEHOLD LEVEL							
migran~d	dF/dx	Std. Err.	z	P>z	x-bar	[95%	C.I.]
edu_high	-0.05822	0.068757	-0.85	0.397	0.22549	-0.19299	0.076538
edu_non	0.026711	0.032269	0.83	0.408	1.04902	-0.03654	0.089956
edu_lit	0.019349	0.033493	0.58	0.563	1.59314	-0.0463	0.084993
logper~e	-0.00504	0.039011	-0.13	0.897	6.91383	-0.0815	0.07142
log_l~19	-0.02601	0.032152	-0.81	0.419	4.11781	-0.08903	0.037006
HH_Inc	-0.02367	0.059282	-0.4	0.69	1.30882	-0.13986	0.09252
obs. P	0.696078						
pred. P	0.698548	(at x-bar)					

APPENDIX F: The effect of son_mig without num_son included – column 3, Household perspective

The effect of son_mig without num_son included – column 3, Household perspective						
Probit regression, reporting	marginal	effects	Number of obs	=	500	
			LR chi2(20)	=	434.79	
			Prob > chi2	=	0	
Log likelihood = -125.06914			Pseudo R2	=	0.6348	C.I.]
edu_no~g .016739	0.107613	0.16	0.876	0.132	-0.19418	0.227656
edu_li~g -.0396688	0.087596	-0.45	0.651	0.556	-0.21136	0.132017
edu_hi~g -.0784244	0.129099	-0.61	0.545	0.09	-0.33145	0.174605
labor_~u .6879235	0.296847	2.34	0.019	0.832	0.106114	1.26973
servic~u 1.044609	0.345924	3.01	0.003	0.09	0.366611	1.72261
famsize -.0130566	0.021288	-0.61	0.543	4.48	-0.05478	0.028667
num_mi~a -.2818589	0.303718	-0.92	0.355	0.932	-0.87714	0.313417
fem_hh .0041557	0.025911	0.16	0.873	1.858	-0.04663	0.054939
d_in_law .1995111	0.11315	1.72	0.086	0.24	-0.02226	0.421282
grandc~d -.0134528	0.082743	-0.16	0.871	0.314	-0.17563	0.148721
edu_non -.0261569	0.030307	-0.87	0.387	1.1	-0.08556	0.033244
edu_high -.1405532	0.066323	-2.1	0.036	0.134	-0.27054	-0.01056
some_c~e* .1329394	0.054241	2.1	0.036	0.114	0.026629	0.23925
high_c~e* .4414401	0.05248	4.48	0	0.26	0.338581	0.544299
visi~2yr .0344808	0.074387	0.46	0.643	0.198	-0.11131	0.180276
vis~5_yr .1684175	0.18044	0.93	0.351	0.036	-0.18524	0.522074
son_in~a .0509772	0.105004	0.48	0.628	0.294	-0.15483	0.256781
bro_in~a .0173037	0.065855	0.26	0.793	0.178	-0.11177	0.146376
spouse~a* .2661269	0.050161	3.4	0.001	0.1	0.167812	0.364441
second~a	0.08577	2.32	0.021	0.108	0.02632	0.36253

.1944301					3	7
obs. P .564						
pred. P .783602	(at x-bar)					

APPENDIX G: ICDDR,B Baseline Data on Migration Destination for migrants from Mirzapur

Table: Relatives living outside of Bangladesh

Relatives abroad	Number (n=65,653)	Percent
Yes	25,036	38.1
No	40,617	61.9
Household relatives living abroad		
UK/ Europe	451	1.8
North America/ USA	378	1.5
Australia/ New Zealand	184	0.7
Middle East	20,817	83.2
Malaysia/ Singapore/ Brunei	4622	18.5
Other country	588	2.4